TECHNOLOGY DEPT.

October 29, 1941

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NATIONAL PETROLEUM NEWS

Effect of 100-Octane Gasoline Program Upon Manufacture of Other Products

Requirements for raw materials to produce fighting grade aviation fuels may affect the quality of motor gasoline in 1942, Washington conference brings out ..... Page R-337

Evaluation of Granular Adsorbents for Petroleum Refining

A method is described as used by two large companies to evaluate laboratory and plant results from clay percolation. Typical data of results are shown ..... Page R-339

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Utilization of Fuels and Lubricants For National Defense Discussed by SAE

The speakers at the Society of Automotive Engineers meeting in Tulsa on Oct. 23 and 24 stressed the application of technical development in the manufacture of 100 octane gasoline, diesel fuel and lubricants as required by the national emergency..... Page 35

REFINING TECHNOLOGY EDITION

The PLANT BEHIND THE PRODUCT--

THE plant in which ERIE products are made is modern . . . . . equipped with the latest production machinery. Actual working floor space has been tripled in the period from 1929 to 1941.

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COMING MEETINGS

NOVEMBER

American Institute of Chemical Engineers, 34th annual meeting, Cavalier Hotel, Virginia Beach, Va., Mon.-Wed., Nov. 3-5.

Society of Automotive Engineers, West Coast Transportation & Maintenance Meeting, San Francisco, Calif., Wed.-Thurs., Nov. 5-6.

American Petroleum Institute, 22nd Annual Meeting, St. Francis and Palace Hotels, San Francisco, Calif., Mon.-Fri., Nov. 3-7.

American Automobile Assn., 39th Annual Convention, White Sulphur Springs, W. Va., Wed.-Sat., Nov. 12-15.

Society of Automotive Engineers, National Transportation & Maintenance Meeting, Statler Hotel, Cleveland, Ohio, Thurs.-Fri., Nov. 13-14.

American Assn. of Oilwell Drilling Contractors, Baker Hotel, Dallas, Tex., Thurs.-Fri., Nov. 13-14.

DECEMBER

New Mexico Oil & Gas Assn., Artesia New Mex., Wed., Dec. 3.

Nebraska Petroleum Marketers, Inc., Fontanelle Hotel, Omaha, Neb., Tues.-Thurs., Dec. 2-4.

Oklahoma Stripper Well Assn., Tulsa, Okla., Fri., Dec. 5.

National Highway Transportation Show, Convention Hall, Philadelphia, Pa., Sat.-Fri., Dec. 6-12.

South Dakota Independent Oil Men's Assn., 23rd Annual Convention, Aberdeen Civic Auditorium & Hotel Sherman, Aberdeen, S. D., Tues.-Wed., Dec. 9-10.

New Jersey Oil Trade Assn., Annual Banquet and Election of Officers, Robert Treat Hotel, Newark, N. J., Thurs., Dec. 11.

JANUARY, 1942

Society of Automotive Engineers, Annual Meeting (and Engineering Display) Book Cadillac Hotel, Detroit, Mich., Mon.-Fri., Jan. 12-16.

FEBRUARY

Kentucky Petroleum Marketers, 16th Annual Meeting, Louisville, Ky., Wed.-Thurs., Feb. 11-12.

Iowa Independent Oil Jobbers' Assn., Annual Convention, Hotel Fort Des Moines, Des Moines, Ia., Wed.-Fri., Feb. 25-27.

American Petroleum Institute, Div. of Production, Southwestern District, Spring Meeting, Adolphus Hotel, Dallas, Tex., Thurs.-Fri., Feb. 26-27.

North Texas Oil & Gas Assn., Wichita Falls, Tex., Sat., Feb. 28.

MARCH

Indiana Independent Petroleum Assn., Spring Convention and Refiners' and Suppliers' Exhibit, Hotel Severin, Indianapolis, Ind., Tues.-Thurs., March 3-5.

Wisconsin Petroleum Assn., Annual Convention and Equipment Show, Schroeder Hotel, Milwaukee, Wis., Wed.-Fri., March 18-20.

American Society of Mechanical Engineers, Spring Meeting, Houston, Tex., Mon.-Wed., March 23-25.

APRIL

American Institute of Mining & Metallurgical Engineers, Cincinnati, O., Wed.-Fri., April 15-17.

National Petroleum Assn., 39th Semi-Annual Meeting, Hotel Cleveland, Cleveland, O., April 16-17.

American Assn. of Petroleum Geologists, 27th Annual Meeting, Cosmopolitan Hotel, Denver, Colo., Tues.-Fri., April 21-24.

Petroleum Industry Electrical Assn., Shreveport, La., Wed.-Fri., April 22-24.

MAY

Natural Gasoline Assn. of America, 21st Annual Convention, Mayo Hotel, Tulsa, Okla., Wed.-Fri., May 13-15.

International Petroleum Exposition, Tulsa, Okla., Sat.-Sat., May 16-23.

JUNE

American Society of Mechanical Engineers, Semi-Annual Meeting, Cleveland, Ohio, Mon.-Thurs., June 8-11.

OCTOBER

American Society of Mechanical Engineers, Fall Meeting, Rochester, N. Y., Mon.-Wed., Oct. 12-14.

NATIONAL PETROLEUM NEWS

OCTOBER 29, 1941

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THIS WEEK WITH NPN

NPN & OILGRAM EXPAND

Beginning this week, NPN and its affiliated daily, *Platt's Oilgram,* has 3 full-time news reporters in its Washington bureau — more manpower than many metropolitan newspapers, more than ANY trade publication.

Up-to-the-minute news reporting on priorities, price control, PCO regulation and other defense developments, is vital to an oil company's operations nowadays. So, as the NEWSpaper of the oil industry, we have enlarged our staff to cover defense oil news. But we won't neglect routine news from Congress, ICC, Wage-Hour, Justice Department, tax bureau, etc. Here's our line-up now at Washington:

WARREN W. BURNS — started in NPN's news bureau at Los Angeles after several years' experience as reporter on *Los Angeles Examiner.* For more than a year, he worked on NPN's news desk gaining background on news of the entire industry. Transferred to Washington to head our bureau, he soon established a reputation for fast, accurate reporting and will do even better now with a new and larger staff.

OLIVER H. KNIGHT—native of Brownwood, Tex., had his early newspaper training in East Texas on the *Longview Journal.* For past 3 years, he has been a news reporter in Washington for United Press. He leaves the UP for NPN after two years of covering Interior Department — including Petroleum Coordinator's Office since its organization—for this nation-wide news service. His keen questioning of Secretary Ickes is a feature of weekly press conferences.

LOUIS F. BAIN—comes to NPN's staff from Richmond, Va., where for 7 years he has been assistant secretary of Virginia Petroleum Industries Committee, with a wide acquaintance among Virginia oil men.

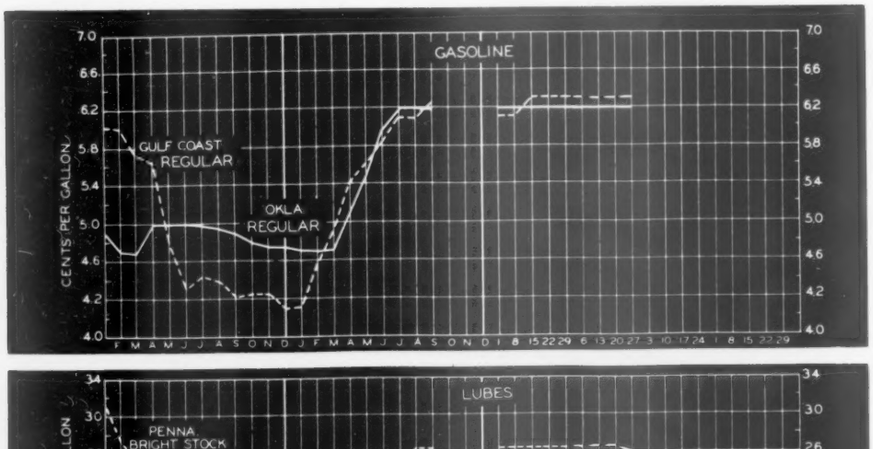
Readers of NPN and *Oilgram* going to Washington are cordially invited to visit our news bureau in the National Press Building. Our staff there "knows the ropes," they'll be glad to help you in any way. Please stop in on your next trip to Washington.

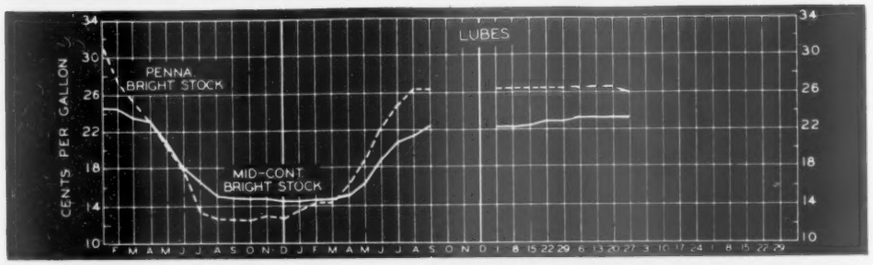
Meanwhile, for the thousands of oil men back home, we'll give even better service with this enlarged staff gathering the news while it's "hot" and wiring it quickly by teletype.

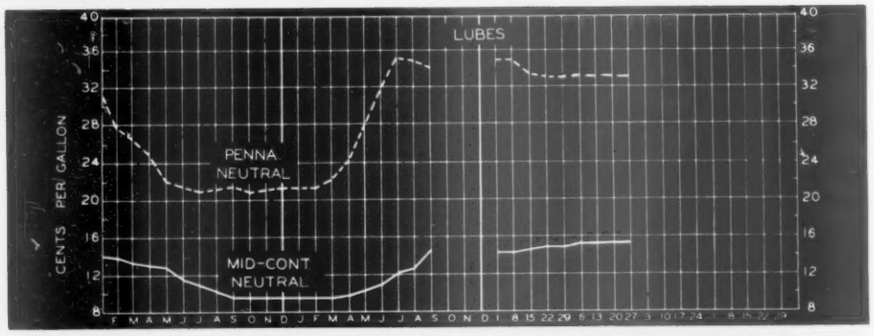
STATISTICS

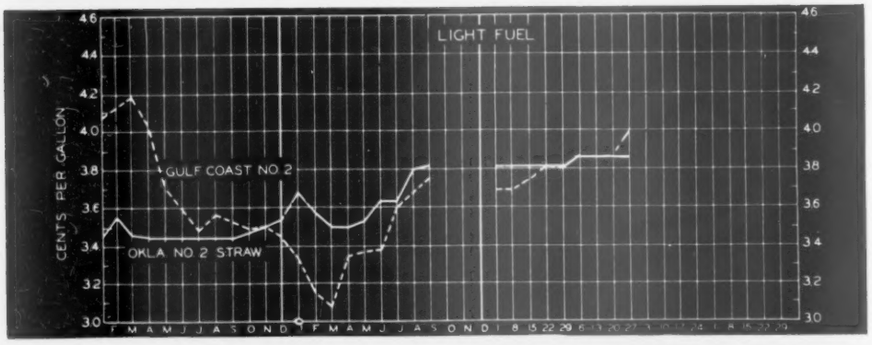
Refinery Prices

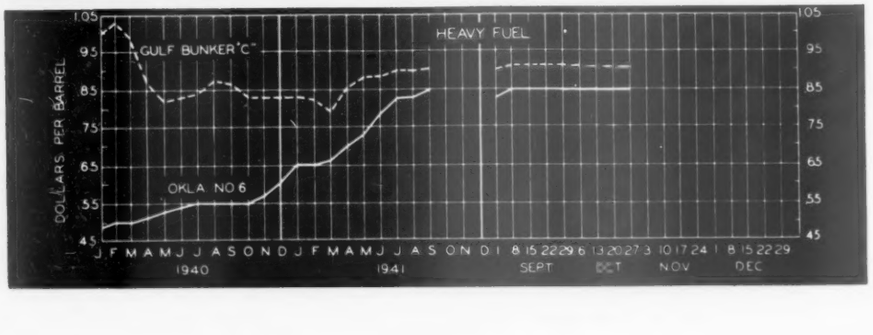
Monthly prices in graphs are averages of daily high and low prices shown in Platt's Oilgram. Weekly prices are averages of high and low prices shown in Monday Oilgram, and in NPN.











NPN Gasoline Index

	Dealer T.W. Cents per Gallon	Tank Car Cents per Gallon
Oct. 27	10.00	6.80
Month ago	10.02	6.78
Year ago	8.69	5.09

Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities.

Tank car index is a weighted average of following wholesale markets for regular-grade gasoline, FOB refineries or terminals: Okla., Mid-Western, W. Penna., Calif., N. Y. Harbor, Philadelphia, Jacksonville, Boston, Gulf Coast.

Production and Inventory of Pennsylvania Lubricating Oils

(Compiled by National Petroleum Assn. from reports of all companies which refine Pennsylvania crude oil. Figures in barrels.)

	Total Production Sept. 1941	Inventory Sept. 30, 1941	Inventory Aug. 31, 1941	Inventory Sept. 30, 1940
1. Raw Long Residuum	85,623	52,827	54,600	40,581
2. 600 S.R. Stock	305,392	274,900	266,881	285,905
3. Other S.R. Stock	54,437	86,395	76,275	120,684
4. Fin. Long Residuum	39,138	37,215	39,005	58,986
5. Bright Stock	169,485	243,863	236,511	424,023
6. Viscous Neutral	75,070	36,485	42,926	124,904
7. Viscous Neutral	94,786	60,184	67,558	143,929

Item 1 includes all raw long residuum below, and not salable as, 600 fire.
Item 2 includes all steam refined stock commonly sold or used as 600 and as raw material for bright stock.
Item 3 includes steam refined stock not reported in items 1 and 2.
Item 4 includes finished dewaxed long residuum.
Item 5 includes material not reported in item 4.
Item 6 includes viscous neutral below 180 vis. but not below 142 vis. at 100.
Item 7 includes viscous neutral of 180 vis. at 100 and above.

Ohio Taxable Gasoline Consumption

(Compiled by Ohio Petroleum Marketers Assn. from State Tax Reports.)

Month	Gallons
August, 1941	143,465,554
August, 1940	132,012,884
Gain	11,452,670
% Gain	8.68
Jan.-Aug., 1941	1,017,021,225
Jan.-Aug. 1940	915,205,814
Gain	101,815,411
% Gain	11.13

Year	Gallons
1931	984,800,009
1932	903,091,462
1933	886,641,024
1934	955,469,314
1935	1,014,925,319
1936	1,133,834,593
1937	1,234,481,548
1938	1,215,634,621
1939	1,302,378,618
1940	1,398,039,100

Oil Burner Statistics

(Compiled by U. S. Bureau of Census. Figures include burners consuming Commercial Standard No. 1 fuel oil, or heavier.)

Item	1941 August	1941 July	1940 August	1939 August
New orders, less cancellations	30,389	28,511	32,772	22,748
Unfilled orders, end of month	22,885	23,114	8,202	5,040
Shipments:				
Total	30,618	27,845	31,544	24,660
United States	30,369	27,573	31,197	24,014
Canada	91	91	199	122
Foreign	158	181	148	524
Stocks, end of month	31,940	33,017	22,870	19,642

	Total, 8 Months January-August 1941	1940	1939
New orders, less cancellations	208,111	146,725	114,520
Shipments:			
Total	193,269	141,428	111,635
United States	191,521	139,197	107,975
Canada	821	837	499
Foreign	927	1,394	3,161

STATISTICS

Refinery Operations

(American Petroleum Institute Figures in Thousands of Barrels of 42 Gallons each)

Districts	Daily Average Crude Runs to Stills — Week Ended Oct. 25	Oct. 18	Per Cent of Reporting Capacity Operated — Week Ended Oct. 25	Oct. 18	Gasoline Production at Refineries incl. Natural Blended — Week Ended Oct. 25	Oct. 18	Total Stocks Finished & Unfinished Gasoline — Week Ended Oct. 25	Oct. 18
East Coast	669	684	99.4	101.6	1,689	1,968	19,547	19,559
Appalachian	126	125	90.6	89.9	440	449	3,149	3,216
Ind., Ill., Ky.	651	667	102.5	105.0	2,741	2,624	15,382	15,283
Okla., Kans., Mo.	319	320	95.8	96.1	1,299	1,281	7,309	7,147
Inland Texas	142	149	85.5	89.8	660	674	2,381	2,298
Texas Gulf	969	995	97.0	99.6	2,986	3,137	11,527	11,055
La. Gulf	152	156	102.7	105.4	470	394	2,501	2,664
N. La., Ark.	53	53	112.8	112.8	166	153	413	403
Rocky Mt.	55	55	80.9	80.9	199	211	999	1,006
California	558	550	78.0	76.9	1,666	1,628	14,715	14,538
Reported	3,694	3,754	94.2	95.7	12,316	12,519	77,923	77,169
Estimated Unreported	366	366			1,370	1,390	5,420	5,415
U. S. Total*	4,060	4,120			13,686	13,909	83,343	82,584
U. S. Total 10-25-40*	3,529				11,680		79,800	

Districts	Total Stocks Gas Oil & Distillates — Week Ended Oct. 25	Oct. 18	Total Stocks Residual Fuel Oil — Week Ended Oct. 25	Oct. 18	Stocks Aviation Gasoline Included in Finished & Unfinished Gasoline Total — Week Ended Oct. 25	Oct. 18
East Coast	20,771	20,212	10,907	10,875		
Appalachian	663	606	400	402	**East Coast** 649	674
Ind., Ill., Ky.	5,934	5,862	4,641	4,676	**Interior** 1,357	1,387
Okla., Kans., Mo.	2,179	2,140	2,195	2,137	**Gulf Coast** 2,649	2,675
Inland Texas	474	571	1,353	1,423	**California** 2,090	2,115
Texas Gulf	6,380	6,358	8,947	9,215		
La. Gulf	1,857	1,838	2,068	2,069		
N. La., Ark.	407	410	397	428		
Rocky Mt.	132	127	307	325		
California	12,961	12,929	62,755	62,875		
Reported	51,758	51,053	93,970	94,425	6,745	6,851
Estimated Unreported	1,425	1,350	1,325	1,375	385	385
U. S. Total*	53,183	52,403	95,295	95,800	7,130	7,236
U. S. Total 10-25-40*	48,990		107,123		6,171	

*Estimated, U. S. Bureau of Mines basis.

Crude Oil Stocks

(Bureau of Mines Figures; Thousands of Barrels.)

Grade or Origin	Oct. 4	Oct. 11	Oct. 18	Change from Oct. 11
Pennsylvania Grade	3,879	3,870	3,867	— 3
Other Appalachian	1,450	1,518	1,417	— 101
Lima-Michigan	1,023	1,055	1,139	+ 84
Illinois-Indiana	19,323	19,102	19,262	+ 160
Arkansas	2,783	2,708	2,703	— 5
Kansas	7,712	7,818	7,577	— 241
Louisiana:	12,604	12,697	12,925	+ 228
Northern	4,216	3,946	4,054	+ 108
Gulf Coast	8,388	8,751	8,871	+ 120
Mississippi	1,838	1,894	1,709	— 185
New Mexico	6,884	6,815	6,605	— 210
Oklahoma	53,711	52,525	52,394	— 131
Texas:	81,530	80,454	80,916	+ 462
East Texas	19,927	19,706	19,827	+ 121
West Texas	17,177	16,593	17,360	+ 767
Gulf Texas	24,485	24,472	24,304	— 168
Other Texas	19,941	19,683	19,425	— 258
Rocky Mountain	15,604	15,648	15,587	— 61
California	34,935	34,644	35,198	+ 554
Foreign	2,868	2,823	2,306	— 517
Total United States refinable	246,144	243,571	243,605	+ 34
Heavy in California	10,231	10,072	9,940	— 132
East Coast refinery crude	13,390	13,497	13,281	— 216
East Coast pipe line crude	554	518	544	+ 26
East Coast refined products	62,569	62,797	65,545	+2,748
Total all oils	76,513	76,812	79,370	+2,558
East Coast refined stocks in bond	*750	*750	*750	.....

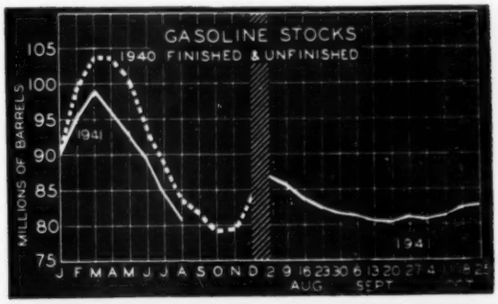
*Includes estimates of 100 for distillate and 650 for residual, which estimates should be added to B. of M. current totals for all oils as shown above when comparing with a year ago.

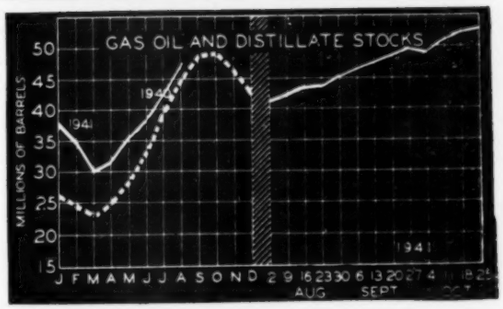
Crude Oil Production

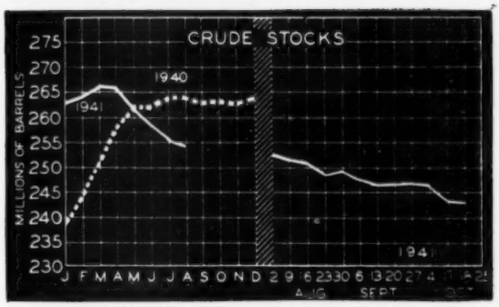
(American Petroleum Institute figures)

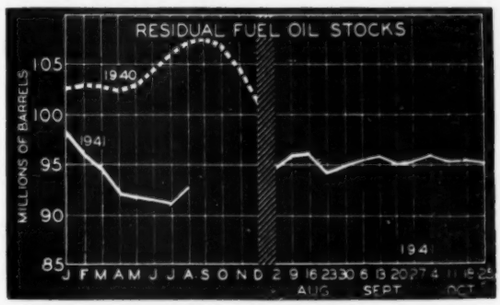
	—WEEK ENDED— Oct. 25 Barrels	Oct. 18 Barrels
	—Daily Average)—	
Oklahoma	425,300	418,100
Kansas	255,500	259,800
Nebraska	5,650	5,700
Texas	1,468,700	1,465,700
Louisiana	344,700	345,500
Arkansas	71,950	71,850
Mississippi	66,450	64,200
Illinois	419,700	420,100
Indiana	19,100	18,650
Eastern (Ill. & Ind. excluded)	92,700	94,300
Michigan	58,650	59,200
Wyoming	86,150	85,500
Montana	20,050	20,050
Colorado	4,650	4,850
New Mexico	116,450	115,950
California	643,100	661,100
Total U. S.	4,098,800	4,110,550

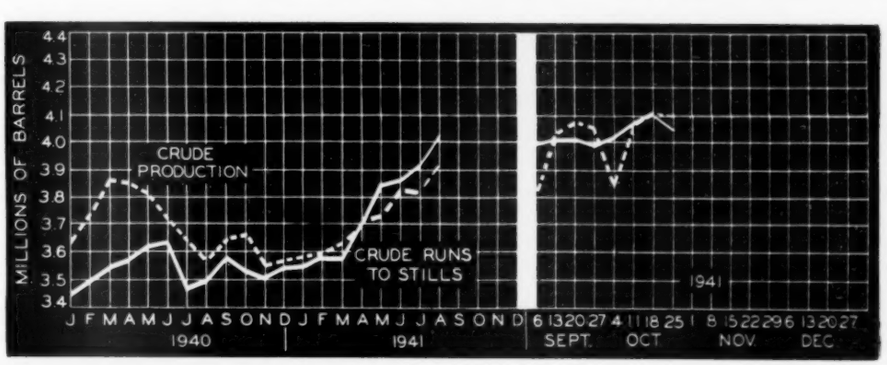
Monthly figures are actual as reported by Bureau of Mines. Weekly figures are as estimated by American Petroleum Institute on Bureau of Mines basis, except crude stocks which are as reported by Bureau of Mines. Weekly stocks figures beginning Aug. 16, 1941 and monthly stocks figures beginning July, 1941 do not include shuttle or lease-lend material formerly reported as part of inventories.











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Heads Lubricating Grease Institute . . .

SYDNEY BEVIN

"If I look—or ever did look—anything like Dillinger I'm a Chinaman." Nevertheless, Sydney Bevin of Toledo, who supplied that quotation was mistaken for this criminal and picked up by police in an eastern city while the man-hunt for John Dillinger was at a feverish peak and the price on his head (in whole or in part) was $10,000.

Mr. Bevin is new president of the National Lubricating Grease Institute and chief engineer of the Fiske Brothers Refining Co., Toledo, Ohio. He joined Fiske in 1913, leaving to join the U. S. Army during World War I. He served as a Captain in the Ordnance Department. Following the armistice, he joined Tidewater Oil Co. and worked for them until 1934 when he rejoined Fiske.

Mr. Bevin was born in New York City and graduated from Cornell University as a mechanical engineer. Astronomy and petroleum research are his two hobbies. He is married and has two children.

Recently, Mr. Bevin was appointed by the Petroleum Co-ordinator's Office to District 2 grease manufacturer's subcommittee. He belongs to the Society of Automotive Engineers, the American Society for Testing Materials, the American Society of Mechanical Engineers, American Assn. for the Advancement of Science, Army Ordnance Assn. and Engineers' Club of New York.

Asked how he happened to enter the oil business, Mr. Bevin replied that he planned on an oil career while still at Cornell.

NATIONAL PETROLEUM NEWS

VOLUME 33 WEDNESDAY, OCTOBER 29, 1941 NUMBER 44

BULLETINS

OPA WILL PENALIZE PRICE 'VIOLATORS'

WASHINGTON — Rigid enforcement of its price schedules, including retail prices, will soon be undertaken by Office of Price Administration, an OPA spokesman told NPN. "Drastic penalties" will be meted out to "violators," he said.

A half-forgotten law, holdover from World War I, will be drawn upon by OPA in an effort to deprive "violators" of their transportation rights, he hinted. In other words, persons selling at prices not approved by OPA would be "bottled up" with no outlet for their products.

Asked by NPN how retail prices would be enforced, the OPA official said that city authorities—mayors—would be asked to revoke business licenses of retailers charging more than prices set by OPA. This idea was first suggested by New York's Mayor LaGuardia.

* * *

More Bulletins on Page 9.

OPA Eyes Prices—The Subnormal Ones

NPN News Bureau

WASHINGTON, Oct. 27—Office of Price Administration is planning a nation-wide study of prices at which gasoline and other petroleum products are sold the public. It has asked the industry's five district marketing committees for the names of suppliers at "key" points in all states, and these oil companies are to be sent a questionnaire by OPA.

Study by oil marketers of the points named for which price data is to be gathered brings out that, almost without exception, they are towns and cities where sub-normal gasoline prices prevail at present.

The products on which price information is sought include regular and third-grade gasoline, kerosine, range oil, No. 1 fuel oil, where the price differs from that for kerosine, Nos. 2, 3, 4 and 5 grades of fuel oil and heavy Bunker C fuel oil.

In a letter on Oct. 16, J. K. Galbraith, assistant administrator for OPA, asked Dr. John W. Frey, marketing director for the Petroleum Co-ordinator's Office, for the names of "primary and important secondary suppliers" for points named in all states. In most states two or three towns are named, in a few states as many as a dozen.

Ickes May Allocate Oil's Supply Needs

NPN News Bureau

WASHINGTON, Oct. 28—Complete authority over allocation of critical materials—such as steel—and equipment used in all branches of the petroleum industry may be given to the Petroleum Co-ordinator's Office.

Under this plan, Office of Production Management would allot an overall supply for entire industry and PCO would allocate it. Present priorities procedure probably would be retained, though its tie-in has not been disclosed.

Ickes Shelves Oil 'Shortage', Rescinding All Restrictions

NPN News Bureau

WASHINGTON, Oct. 27.—On a strictly "provisional basis," the East Coast oil "shortage" was shelved late this past week, and on the same basis, Great Britain will return 25 additional U. S. tankers by Nov. 30.

At the same time these moves were announced by Petroleum Co-ordinator Ickes, he also withdrew Recommendation No. 4 which called for service stations on the East Coast to close from 7 p.m. to 7 a.m. daily.

All restrictions on the sale and transportation of gasoline in District 1 were formally revoked the day following Mr. Ickes' statements by Priorities Director Donald Nelson, Office of Production Management. OPM's Limitation Order L-8 was "buried."

May Retrace Steps

However, neither the oil "shortage" was shelved, the limitation order "buried" nor the tanker plans made public before Mr. Ickes and British representatives marked the "oil shortage shelf" as follows:

"The hazards of war are, of course, uncertain and while the present improvement now makes the return of tankers possible, the British Government is confident that if the need again arises it will be met by similarly prompt and generous assistance."—statement of Sir Arthur Salter, head of the British Merchant Shipping Mission in the U. S.

To Sir Arthur's statement, Mr. Ickes replied:

"That it is impossible to predict the future in terms of your need for tank ships or other facilities, I can well understand, and I assure you that should new and unforeseen developments later require the return to you of the tank ships you

(*Continued on Page 6*)

Night-Closing of Stations Continued in Many Cities

NPN News Bureau

CLEVELAND, Oct. 28—Station operators in key cities in Atlantic Coast area today were endeavoring to "hold their lines" on the 7 p.m. to 7 a.m. curfew on station operations, despite Co-ordinator Ickes lifting all restrictions on gasoline sales.

In most cities, station operators were generally continuing the curfew. Exceptions were mostly the larger stations which had built up their business on basis of 24-hour service.

Dealer mass meetings were being held in many cities to further plans for continuing night-closing. Lack of trained personnel was reported keeping some stations closed at night, defense industries having attracted their former employes. Station attendant's union in New York area was threatening a strike unless stations are reopened.

NPN Makes Spot Check

By telegraph and long-distance telephone, NPN made a spot check of key cities on night-closing trends. Results were:

Buffalo, N. Y.—Only a few stations open after 7 p.m. Monday, with some "late closers" reported wavering. Virtually all lessee operators closed.

Pittsburgh, Pa.—Dealers meet to plan drive for continuing 7-to-7 curfew; compliance now about 50-50.

Erie, Pa.—Only one station reported open Monday night—"and without any concerted action, either."

Jacksonville, Fla.—About 90% of stations were open at 10 p.m. Monday, including every major-brand outlet.

Richmond, Va.—Stations along main arteries are reopening nightly in increasing numbers.

Washington, D. C.—Dealers are hopeful that reopening of stations at night will be limited to those advertising 24-hour service.

Atlanta, Ga.—Dealer Chief Jimmy Robinson reports most stations still observing 7 p.m. curfew.

Philadelphia, Pa.—Mass meeting of dealers Monday night unanimously backed curfew continuance; less than 1% of stations reported open.

New York City—Most lessee-operated stations closed; many dealers, also. But some estimate only 50-50 observance. Mass meeting Oct. 28 to consider plans. Station attendants' union threatens strike.

Boston, Mass.—Night-closing reported 96% effective, with only large, 24-hour stations open.

Charleston, S. C.—Only 2 stations are closing at 7 p.m. Rest of city's 50 or 60 stations are open at night—"just like they have been for last month and a half."

Baltimore, Md.—Most dealers would prefer to close at 7 p.m. and about 90% are doing so.

Charlotte, N. C.—Local dealers "'haven't made up their minds" about night-closing, with about 50% still locking their doors at 7 p.m.

Ickes 'Congratulated' By Senator O'Daniel

NPN News Bureau

WASHINGTON, Oct. 28—Sen. W. Lee O'Daniel, D., Tex., today "congratulated" Petroleum Co-ordinator Ickes on lifting East Coast restrictions "since he has found from our committee that there is no shortage."

Sen. O'Daniel, a member of the Senate oil investigating committee, presumed plans for the 1580-mile crude pipeline from Texas to Philadelphia and New York would be abandoned "inasmuch as there is no shortage."

Sen. Francis Maloney, D., Conn., who also was contacted by NPN, said the only thing pending in the investigating committee was the filing of a report on its investigation, although "not many people will be interested in it now."

Sen. O'Daniel did not know of anything else to come up before the committee, but expressed doubt that it would be disbanded.

are now delivering to us, or of additional ones, we shall be prepared promptly and without hesitation to supply them to you in keeping with our aid to Britain policies already well known to you."

Ban-Lifting Provisional

Directly concerning the oil "shortage," Mr. Ickes said the following in a letter to OPM's Nelson:

"If later it is found necessary to reassign these boats or other boats for defense purposes, I may be compelled to recommend that the gasoline restriction order be reinstated."

Possibility of the "need" to "reinstate" the gasoline restrictions, may be indicated by a statement to NPN from Petroleum Co-ordinator's Office, that except for Recommendations No. 4 and 6, the other 11 remain in full effect. Moreover, a PCO official said these 11 recommendations "should be strengthened rather than revoked."

Among these 11 recommendations which PCO says remain in effect is No. 5 which, in part states:

"The General, Refining, Transportation, and Marketing Committee for District One hold joint or separate meetings from time to time, as the chairmen may desire, to investigate and analyze any facts related to the problem of alleviating the shortage of petroleum products in District One . . . . "

'35' Still in Service

Asked about this portion of Recommendation No. 5, a PCO official said that return of the 25 additional tankers, (15 tankers were previously released, see NPN, Oct. 15, p. 5) represents only part of the U. S. tankers which are in the so-called "shuttle" service between the Gulf and North of Hatteras run. The majority of guesses at to how many tankers will remain in this service are in the neighborhood of 35, indicating that prior to Oct. 20, about 75 U. S. tankers were out of their normal runs.

In announcing that gasoline restrictions had been lifted, Mr. Ickes said:

"The restoration of the 40 tankers has enabled us to reach the goal toward which the Office of the Petroleum Co-ordinator has been striving since this summer—the removal of gasoline restrictions which were necessarily invoked on the East Coast.

"The many steps taken by the Office of the Co-ordinator, together with the outstanding co-operation and help given by the oil industry on all fronts, brought a rapid improvement in the general East Coast oil situation. On top of this improvement, the effective aid given the British has enabled the release of tankers. The restoration of these vessels will mean that we will be able to maintain a better supply of petroleum on the East Coast as long as the ships can be kept in normal service.

"I have therefore requested the Director of Priorities to remove the limitations now in effect."

Seeks Co-operation

However, the Co-ordinator did apply the following "brake," the only one which he mentioned:

"It is my hope that our people will exercise good judgment in the use of gasoline and oil. We have made real gains since early summer, and with the exercise of common sense regarding the use of petroleum and its products, we ought to be able to maintain our gains and prevent any losses."

Just a few hours prior to announcing that gasoline restrictions were removed, PCO issued a statement on the East Coast inventory situation, in which Mr. Ickes said "the outlook is entirely optimistic."

Press associations and newspapers were not discouraged by the Department of Interior's information division, in giving this statement a broad interpretation as to lifting of the "shortage." In fact, one press association went so far as to indicate the "shortage" was over and by mid-afternoon, PCO officials were getting phone calls from various portions of the East Coast asking "is this so?"

Announcement Kept Secret

Most of the PCO assistants knew nothing about the fact that Mr. Ickes was lifting the restrictions, the few officials who did know, having been sworn to secrecy.

When the economic subcommittee, in New York City, was informed about it, members were discussing the November gasoline percentages, and one was reported to have said, when notified, that "if that is so, we'll adjourn and have a drink."

The statement on stocks, which preceded the "restriction lifting" announcement, said that east coast stocks had been built up to a point where only a deficit of 476,000 bbls. remained. Figures also showed that stocks of light heating oils and heavy fuel oils were higher than at the same time last year.

Following table compares current stocks with the 1940 situation:

(Figures in Barrels)

(000 Omitted)	Oct. 19, 1940	Oct. 18, 1941	Difference
Crude oil	13,900	13,281	— 619
Gasoline	19,477	19,559	+ 82
Light heating oils	18,444	20,212	+1,768
Heavy fuel oil	12,582	10,875	—1,707
Total	64,403	63,927	— 476

"These figures speak for themselves," said Mr. Ickes. "They show that our program has been effective and that the bad outlook of the summer has been overcome. We are now in a much stronger position as the result of our efforts, and the outlook is entirely optimistic."

Gasoline, light heating oils and heavy fuel oil stocks on Oct. 18 this year were 2,615,000 bbls. larger than on Oct. 11, Mr. Ickes said, using American Petroleum Institute's figures.

Net Increase Shown

Bureau of Mines reported East Coast refinery stocks of crude at 216,000 bbls. below last week's total, making a net increase in all oils of 2,399,000 bbls. The complete figures follow:

(Figures in Barrels)

(000 Omitted)	Oct. 11	Oct. 18	Difference
Crude oil	13,497	13,281	— 216
Gasoline	18,387	19,559	+1,172
Light heating oils	19,418	20,212	+ 794
Heavy fuel oil	10,226	10,875	+ 649
Totals	61,528	63,927	+2,399

PCO pointed out that this is the first time since restrictions were imposed in July that PCO's gasoline inventory figures exceeded those of last year. The brighter outlook was attributed by Mr. Ickes, to the combined use of all means of transportation and the unusually warm weather during September and October, the mild weather accounting for less fuel oil demand.

Ickes Lists Reasons

Further comment by Mr. Ickes on the stock situation, follows: (It is a portion of Mr. Ickes' letter to Mr. Nelson recommending that the gasoline restrictions be lifted).

"The motor fuel restriction orders which have now been in effect since August have been of important assistance in building up eastern stocks of both gasoline and light fuel oil. In addition, an unpredictable turn of exceedingly mild weather in September and October has relieved the drain on domestic heating oil stocks which normally occurs at this time of the year.

"Finally, as a result of the co-operation of the petroleum industry with my office, alternative methods of transportation other than tanker have now been constructed, developed, speeded up, and enlarged to the point where this increased ca-

PCO Plans to Continue Use Of Emergency Transportation

NPN News Bureau

WASHINGTON, Oct. 27.—Continued use of emergency transportation media—barges, tank cars and pipe-lines—was advocated by an official in Petroleum Co-ordinator's Office today as a guarantee against return of gasoline restrictions in the East.

He said the combined use of these facilities and the tankers Britain is returning would be necessary.

Furthermore, he declared, 25 tankers would bring in only 125,000 bbls. a day, compared with the estimated deficiency of 174,000 bbls., thus indicating that only 25 of the 40 tankers to be returned before the end of November would be employed to bring petroleum and its products to the Eastern Seaboard.

Would Push Crude Line

As far as the 1580-mile crude pipe-line from East Texas to the New York-Philadelphia refining area is concerned, this official said no plans to discard the proposal had crossed his desk.

In his opinion, the 11 majors should go ahead with construction of the line as insurance against recurrence of the "shortage."

Meantime, the Maritime Commission disclosed that it expects to announce the award of contracts soon, maybe by the end of this week, for the construction of 15 concrete barges, to transport crude and its product. Under present plans, 3 shipyards—1 on the East, 1 on the Gulf, and 1 on the Pacific Coast—would construct five barges each.

Bourque to Continue

Defense Transportation Chief Ralph Budd does not contemplate making any changes in the operation of the A. V. Bourque defense tank car committee in Chicago, one of Mr. Budd's associates reported.

Continued operation of the Tanker Control Board—composed of PCO, Navy, Maritime Commission, and oil industry representatives—was seen in the fact that the board will reassign the 40 tankers to "normal American service."

Regarding the Maritime Commission's concrete barges, the Commission is negotiating with several shipbuilders to find the 3 yards where the barges will be built. Two or 3 different types of barges have been proposed, but for the most part they are shaped like a ship, having conventional hull lines.

Each barge, made of reinforced concrete, would have a capacity varying from 7000 to 8000 tons. A sea-going tug could tow a couple of them. Speed is about 6½ or 7 knots.

pacity coupled with approximately 150,000 bbls. per day of capacity provided by the tankers which are being returned, appears to be sufficient to remove any present danger of shortage on the East Coast."

Thanks the Oil Industry

Another portion of Sir Arthur Salter's statement said:

"The British Government desires to take this opportunity of expressing its deep appreciation to the United States Government, the Oil Industry and the American Public, whose interests and amenities have been affected, for the assistance which has in a few months raised the oil supplies of Great Britain to their present level."

The assignment and use of the 40 tankers being returned, presumably will be in the East Coast run, transporting crude and its products. However, the PCO press release, states: "The assignment and the use of the vessels will be worked out by the Tanker Control Board," which is under chairmanship of Deputy Petroleum Co-ordinator Davies. Early last week, Mr. Davies told NPN that the 15 tankers, originally returned, would be used as PCO sees fit for various defense needs, one of which is carrying molasses.

6 More For Molasses

Inquiry in Washington as to how many tankers are now being used in the molasses trade brought the unofficial reply of 16, with the possibility of 6 additional ones being added. Alcohol is extracted from molasses and used for various defense needs.

Asked for comment on the lifting of gasoline restrictions, one source here said when "Hitler begins to go after ships in earnest, he'll aim at British tankers—and sink enough to call of U. S. reserves."

"If you can't convince 'em, confuse 'em," was the comment of another observer who said there never was an oil "shortage" and that this removal of restrictions "was only another step to confound the public."

Boyd Elected by A.P.I.

NPN News Bureau

NEW YORK, Oct. 25.—Wm. R. Boyd, Jr., executive vice-president of American Petroleum Institute, has been elected president by Institute's executive committee to fill unexpired term of the late Axtell J. Byles. Election of a president for full term will be held at A.P.I. annual meeting in San Francisco next week.

Plenty of Oil for Defense Suman Declares

Special to NPN

SALT LAKE CITY, Oct. 25.—John R. Suman, of Houston, Tex., vice president of Humble Oil and Refining Co., visiting Utah as president of the American Institute of Mining and Metallurgical Engineers, declared "America has got plenty of oil, and can make itself felt in the world struggle, even if Hitler gets the Russian oil wells."

PCO to Suggest Use of Substitutes For Steel Barrels, Tin Containers

NPN News Bureau

WASHINGTON, Oct. 25—To save steel and iron that is now being used for barrels and other types of containers, Petroleum Co-ordinator's Office is expected to ask entire U. S. oil industry to substitute wooden barrels and containers made of cardboard and glass.

In an estimate made to NPN by an OPM official, it was said that if oil companies used wooden rather than steel barrels that it would effect steel saving of from 140,000 to 150,000 tons of steel yearly. Steel hoops which would be used on wooden barrels would use about 40,000 tons of steel yearly, he said.

PCO Amends No. 12

Meanwhile PCO amended Recommendation No. 12 (*see NPN Oct. 8, p. 10*) as follows:

"The transportation committee for District 1 obtain and analyze all pertinent and available facts, figures, and other data, and prepare therefrom a plan for submission to the chief counsel of the Office of the Petroleum Co-ordinator for National Defense, for the equitable distribution among all suppliers of petroleum or petroleum products in said district, of the excess cost of transportation of petroleum and petroleum products to the said Atlantic Coast area by railroad tank car or other alternative means of transportation, or any combination thereof, over transportation by tanker under the Maritime Commission charter rate ceilings."

This amendment was signed by Acting Petroleum Co-ordinator Davies and approved by Assistant Attorney General Arnold.

PCO also formally revoked Recommendation No. 6 which was on percentage of curtailment for non-preferred gasoline consumers.

No. 6 Revoked

Petroleum Co-ordinator Ickes' revocation of the East Coast oil "shortage" automatically revokes Recommendation No. 4 which called for service station closing from 7 p. m. to 7 a. m. daily. Formal revocation is expected shortly.

All other recommendations remain in effect, PCO said. (See p. 5).

About 40 Tankers Remain in Service As Aid to Britain

NPN News Bureau

WASHINGTON, Oct. 27—The United States loaned 40 or 43 tankers to the British for the Gulf-East Coast "shuttle service" and transferred 39 tankers to foreign registry between Sept. 1, 1939, and July 1, 1941, making a total of 79 or 82 tankers transferred from regular runs, NPN learned today from Maritime Commission sources.

During that period, 28 ships with a gross tonnage of 200,083 tons were transferred to Panamanian registry; 5 with a gross tonnage of 22,721 tons to Great Britain; 3 with a gross tonnage of 18,625 to Brazil; 2 with a gross tonnage of 11,096 tons to Venezuela; and 1 with a gross tonnage of 5,030 tons to the Philippines.

Commission experts said some of the tankers in the shuttle service were used alternately to meet British and American needs of the moment.

A British official scoffed at reports that British storage tanks were filled 30 days ago, saying the tanks were not filled, although the storage position "is considerably improved."

Officials pointed out that many of the transferred tankers, particularly those flying the Panamanian flag, were used in British service.

Now It's The Texas Co.

NEW YORK—Merging its principal operating subsidiary, The Texas Co., with the parent company, The Texas Corp., Texaco's board of directors has changed name of the corporation to "the Texas Company."

PCO Won't Have to Answer This Stack of Mail

After Petroleum Co-ordinator Ickes announced "the oil shortage was over", members of PCO's Marketing Division gathered the following morning to view the mail they'll not have to answer —most of which concerned gasoline adjustments. Shown above with Dr. John W. Frey, (seated) marketing director, are (left to right): John E. Mayo, assistant to director of marketing; William M. Little, marketing assistant; Richard G. McCabe, marketing analyst; N. F. Foulds, chief of research, material priorities and special problems; Paul A. Best, assistant marketing director; Lawrence V. Shaughnessy, marketing assistant; Charles R. Denis, chief, fuel oil and related priorities. Seated at right of Dr. Frey is Katherine Hunsaker, junior administrative assistant and Frances Benson, Dr. Frey's secretary

'Gas' Demand Up 13% for August, Bureau Reports

NPN News Bureau

WASHINGTON, Oct. 25. — Domestic demand for motor fuel in August was 13% above same month in 1940, U. S. Bureau of Mines reported today. Total August demand was 62,944,000 bbls., compared with 55,346,000 bbls. for August 1940.

This demand was slightly below July, 1941, which was 63,093,000 bbls.

Due to large amounts of motor fuel sold to Great Britain under the Lease-Lend Act, exports increased sharply, amounting to 2,700,000 bbls., including about 800,000 bbls. of aviation grades.

New Record Made

The decline in gasoline stocks was less than anticipated, Bureau reported, as the output again reached a new peak. Daily average crude runs to stills was 4,018,000 bbls. marking the first time that the 4,000,000 mark has been exceeded.

Total stocks of finished and unfinished gasoline on Aug. 31 were 80,377,000 bbls., or about 3,300,000 bbls. less than on hand last year, Bureau said. For the East Coast, this same comparison showed 20,537,000 bbls. this year against 21,886,000 bbls. last year, Bureau said.

With the cumulative domestic demand for fuel oil, both light and heavy, running about 13% above 1940, Bureau reported domestic demand for kerosine about the same for both periods. However, the 1941 gain for lube oils is reported close to 33%.

Yields of both gasoline and distillate were off in August, with residual and unfinished oils showing "compensatory gains".

Oil Burner Subcommittee Announced by OPM

NPN News Bureau

WASHINGTON, Oct. 25— Formation of an Oil Burner and Stoker Subcommittee with Ross Sherman, Hartford, Conn., president of Silent Glow Burner Corp., and L. A. Welsh, Peoria, Ill., president of Hart Oil Burner Co., as members, was announced today by Office of Production Management.

This organization is a subcommittee to the Plumbing and Heating Defense Industry Advisory Committee. Other committee members are: E. C. Sammons, Portland, Ore., vice-president of Iron Fireman Co.; J. H. Simpson, Manheim, Pa., vice-president of Hershey Machine and Foundry Co., and J. R. Rainbault, Bloomfield, N. J., manager of A.C.C.R. Dept, General Electric Co

Pyron Appointed Chairman Of Army's 'Spec' Committee

NPN News Bureau

WASHINGTON, Oct. 27. — Gen. Walter B. Pyron has been named chairman of the War Department's Committee on Liquid Fuels and Lubricants, replacing Lt. Col. Ray M. Hare, QMC.

General Pyron, former vice-president in charge of production for Gulf Oil Corp., recently assumed duties as liaison officer between War Department and Petroleum Co-ordinator's Office.

The Liquid Fuels and Lubricants Committee is co-ordinating specifications for all petroleum products bought by all Army units, except the air corps. For complete personnel, see NPN, Oct. 1, p. 8.

Maine Jobbers Write Ickes

CLEVELAND — Maine Independent Oil Marketers Assn. has written to Petroleum Co-ordinator Ickes calling his attention to an editorial in the *Chicago Tribune*, entitled "No Place for a Faker," and asked Mr. Ickes as to authenticity of its statements. The editorial expressed doubts as to an oil "shortage" in the East.

District 2 Group Protests 'Squeeze' Of Jobber Margins

NPN News Bureau

CHICAGO, Oct. 27.—At its organization meeting today, the jobbers' subcommittee of District 2 Marketing committee drafted a protest against "squeeze" of jobber margins with tank wagon prices lagging behind their tank car costs.

Survey of jobbers' costs in Iowa and Missouri by a subcommittee, consisting of B. L. Majewski, Chicago, of Deep Rock Oil Corp., D. Oty Groce, Groce Independent Oil Co., St. Louis, and Leland L. Harms, Harms Oil Co., Allison, Ia., reported their study incomplete as yet.

Jobbers voted to table consideration of a 7 p.m. to 7 a.m. closing in the Middle West, in view of lifting of gasoline restrictions in the East. The dealers' subcommittee, however, renewed its request for a station curfew, saying shortage of manpower warranted its further consideration.

Marketing committee will present jobbers' protest to Washington, which is aimed at Office of Price Administration's policy of holding down tank wagon and retail prices while tank car advances.

Huge Demands Seen for Lead

NPN News Bureau

WASHINGTON, Oct. 28.— While defense circles here today praised move of Ethyl Gasoline Corp. in substituting hydrochloric acid for chlorine in manufacture of tetraethyl lead, as a move to conserve vital defense materials, one source said it would have comparatively little effect as "such huge demands are being made on lead."

Asked if there was any possibility of curtailment of tetraethyl lead, due to these "huge demands," this source declined to make any definite comment, but another source indicated that "something might be in the wind."

* * *

Ethyl Announces New Chlorine Plan

NPN News Bureau

NEW YORK, Oct. 25.—Ethyl Gasoline Corp. today announced its contribution to alleviating the shortage of chlorine with issuance of following statement:

"The Ethyl Gasoline Corp. announced today that by substituting hydrochloric acid for chlorine in the manufacture of tetraethyl lead it will make over a million cubic feet of chlorine gas available daily to ease national shortages in this defense chemical. Raw materials consumed by the manufacture of hydrochloric acid will be common salt and sulphuric acid. Large quantities of salt, and sulphur to make the acid, are mixed near Ethyl's Baton Rouge, La., manufacturing plants.

"A saving of critical months will be effected by this substitution, it is stated, as over a year would be required if the government had to provide new chlorine capacity equal to that which will be freed when the hydrochloric acid plant is completed next Spring.

"Ethyl's chlorine-sodium plant, operated by the R & H Chemicals Department of E. I. du Pont de Nemours & Co., has been running at full capacity since chlorine shortages first developed in order to replenish dwindling stores at other points. Designed for the production of chlorine gas, however, the plant has only limited facilities for liquefying, and chlorine can be shipped only when converted to liquid form.

"Machinery to liquefy all chlorine produced will be installed on rush orders, to be completed by the time the hydrochloric acid plant is ready to supply needs of tetraethyl lead manufacture. The capacity of the chlorine plant will be increased by the addition of a new wing, also expected to go into operation next Spring.

"Hydrochloric acid does not enter the tetraethyl lead reaction, but is used in the manufacture of an important intermediate, ethyl chloride. Most industries using chlorine cannot utilize hydrochloric acid as a substitute, it is pointed out. The particular chemistry of the tetraethyl lead industry permits this substitution.

"Construction of additions to Ethyl's Baton Rouge plants at a cost of $2,500,000 will be speeded with the aid of government priorities that rate this project as vital to national defense."

District 2 Will Have New Refining Head

NPN News Bureau

WASHINGTON, Oct. 25.—Although Earl Petty, District 2's refining director, is expected to return shortly to the U. S. from Russia where he went with the Harriman Mission, he will not resume his duties as refining director, Petroleum Co-ordinator's Office said this week.

Reason given by PCO is press of duties in connection with the study of Russian refining needs. A new refining director for District 2 is expected to be announced shortly, reports PCO.

Some members of the Harriman Mission were seen at PCO late this week, but nothing could be learned regarding proposals to supplement Russian refining equipment.

PCO Finds Olney Crude For One Week's Operation

NPN News Bureau

TULSA, Oct. 27.—In accordance with a request from the Petroleum Co-ordinator's Office to seek new crude supply for Olney Oil & Refining Co., PCO's District 3 committee has obtained about 10,000 bbls. of oil for the Olney, Tex. refiner. This supply is sufficient to operate the plant only about a week, prolonging its operation until Nov. 7.

Olney's present crude source has advised it will be unable to furnish the plant's needs for 50,000 bbls. of oil monthly beyond Nov. 1. Permanent shutdown will result if new crude supply is not obtained, Olney executive told PCO recently.

2 Carloads of Toluol Leave Baytown, Texas

NPN News Bureau

WASHINGTON, Oct. 27—The first two carloads of toluol manufactured by Humble Oil and Refining Co. at Baytown, Tex., were shipped to a TNT plant this past week, U. S. War Department states.

This $12,000,000 toluol plant is known as the Baytown Ordnance Works and was constructed adjacent to Humble's Houston refinery.

BULLETINS

PCO TO SET UP SECTION FOR NATURAL GASOLINE

WASHINGTON — Petroleum Co-ordinator's Office today asked the natural gasoline and natural gas industries to expedite nominations of men who will serve on 5 regional committees which will represent it along lines similar to the organization of other branches of petroleum industry.

Production Director Allen, under whose division a natural gasoline and natural gas section is to be set up, emphasized that Co-ordinator Ickes wants Independents represented on the regional committees.

* * *

URGES FUEL OIL STORAGE

LOS ANGELES—Building up of standby fuel oil storage, as a substitute fuel for natural gas now used by factories and oil refineries, is advocated by California Railroad Commissioner Riley. Southern California gas companies have notified their industrial customers that their use of natural gas may be curtailed because of demands by domestic consumers and defense industries.

* * *

CONFER ON DEPLETION

WASHINGTON — A confidential memo to Internal Revenue Bureau field agents—which would prevent oil companies from writing off as depletion the cost of a well drilled under contract—will be subject of conference Nov. 3 between oil representatives and IRB's General Counsel John Wenchel.

Brown Praises Ickes And Industry's Work

NPN News Bureau

NEW YORK, Oct. 25.—Petroleum Co-ordinator Ickes' lifting of gasoline restrictions in the East was hailed by John A. Brown, president of Socony-Vacuum Oil Co., Inc., and general chairman for District 1, who said:

"Secretary Ickes' statement that he has requested the Office of Production Management to cancel the gasoline restriction order is one which the industry has hoped for. Mr. Ickes has always expressed his willingness to make such a recommendation as soon as it became entirely safe to do so.

"The reports of the crude oil and products in storage in the Eastern states at the end of last week showed that these stocks had now reached about the level at which they stood at the same time last year, and forecasts indicated that, with all restrictions removed, the stocks at the end of this year would probably be at least as high as they were at the end of last year.

"This change in the situation as it appeared to be developing last summer with consumption about 10 per cent above and stocks about 12 per cent below last year, represents a real achievement in cooperation between the Government and the oil industry.

Cites Industry's Efforts

"After losing so much of its usual tanker transportation, the industry by unusual and higher cost methods, as well as heavier loading and more efficient handling of tankers, has brought about the improved position. In this effort, the Petroleum Co-Ordinator has played an important part, which is appreciated by the industry. The agreement for the return of an additional 25 tankers by the end of November removes for the present any possible transportation shortage."

Aggressive Steps Outlined to Hike Aviation Gasoline

NPN News Bureau

WASHINGTON, Oct. 25—To reach the 100,000-bbl. daily quota of 100-octane gasoline, by Jan. 1, 1943, several "aggressive immediate" steps will have to be taken, Petroleum Co-ordinator Ickes said this week.

Such action became evident, Mr. Ickes said, from results of a nation-wide survey of 100-octane refining capacity.

With 100-octane refining units now nearing completion, daily output by Jan. 1, 1942 will be 45,835 bbls., or 2557 bbls. above present capacity. An additional 11,994 bbls. daily is expected by Jan. 1, 1943 from construction plans now being made.

Sees Greater Potentials

But to reach the goal of 100,000 bbls. daily, developments depend upon the willingness and ability of refiners to provide for additional facilities which PCO sees as possibilities, said Mr. Ickes.

This potential daily capacity is set at 41,688 bbls. or a total of 99,517 bbls. by Jan. 1, 1943. Added to this, PCO envisions another 3000 bbls. daily through improvement of base stocks. *(See page 37 for additional information—ED.)*

Bids on 150,000 Barrels Of Alkylate Scheduled

NPN News Bureau

WASHINGTON, Oct. 25. — Bids on following two lease-lend schedules open Oct. 28 at U. S. Navy Department:

Schedule LL-9521 calls for 150,000 bbls. of alkylate, delivered f.a.s. vessels, in quantities as ordered during November.

C.I.O. Starts Major Drive To Organize Oil Industry

NPN News Bureau

WASHINGTON Oct. 27.—A major drive to organize 500,000 workers in all branches of the oil industry will begin immediately under the direction of Edwin S. Smith, former member of the National Labor Relations Board, the Congress of Industrial Organizations (C.I.O.) announced today.

Mr. Smith left NLRB a few months ago when President Roosevelt failed to re-appoint him. On numerous occasions, the A.F.L. charged that Smith favored the C.I.O. He was succeeded by Gerald Reilly, solicitor of the Labor Department.

The drive, authorized at the Baton Rouge convention of the Oil Workers International Union (C.I.O.) last September, was announced in a joint statement by C.I.O. President Philip Murray and O.W.I.U. President O. A. Knight who said oil workers are eager to participate in the preparedness drive, but are handicapped "so long as they are treated like voiceless serfs by the great non-union corporations."

Says C.I.O. 'Hitler-Like'

Mr. Smith, who will direct the drive from Washington, subject to supervision of Mr. Murray, declared in a statement that the oil industry, "ridden with paternalism," has yet to "accept the democratic rule of collective bargaining."

In the opposing labor camp, President John Frey of the Metal Trades Department, A. F. of L., at first declined to comment when contacted by NPN, but later declared—when asked about possible "raiding" A.F.L. ranks—that the C.I.O. has done that from the beginning. He charged the C.I.O. with being "Hitler-like" in its methods.

To Concentrate on 'Standards'

The C.I.O. declared it would concentrate on the "Standard Oil Co.," described as the "largest remaining non-union industrial corporation." NPN reached Mr. Knight by telephone in Pittsburgh, who said the term "Standard Oil Co." was a catch-all phrase for the many Standard companies and their affiliates.

Marketing Employes Included

Mr. Knight also told NPN that eventually service station, bulk plant and leased station employes would be reached in the current drive, but declared there was no intent to raid the A.F.L. oil employes, minimizing A.F.L. strength in the oil industry.

Mr. Knight told NPN further that the length of the drive is hard to estimate; it is still in the formulative stage. A large staff of organizers would concentrate on 4 or 5 points which he did not name; and a policy has not been worked out to cover situations where rebellious workers refused to join.

O.W.I.U. authorized the drive last month at Baton Rouge when it voted to spend $200,000 on the campaign, with local unions later ratifying assessments to finance the drive.

The Murray-Knight statement was issued immediately after the C.I.O. and its oil affiliate signed an agreement in Pittsburgh covering the campaign.

Sees Successful Drive

According to the joint statement, the "oil industry is the last of the basic mass production industries that still remains substantially unorganized."

All workers organized in the drive will become members of locals chartered by the O.W.I.U.

"The C.I.O.," said Messrs. Murray and Knight, "is well aware that it is undertaking this major campaign at a time when the successful prosecution of the national defense program is of paramount importance to our country."

In his statement, Mr. Smith said the C.I.O. does not intend to organize oil workers "merely to obtain for these workers a more equitable share of the wealth created by their toil." It also is entering the campaign as a "major contribution to the spirit and reality of democratic national defense."

C.I.O. Outline Aims

"The oil industry is ridden with paternalism," the former NLRB member continued. "The C.I.O. proposes to substitute for paternalism, however benevolent, an adult democratic relationship of equality between management and labor—the relationship embodied in collective bargaining."

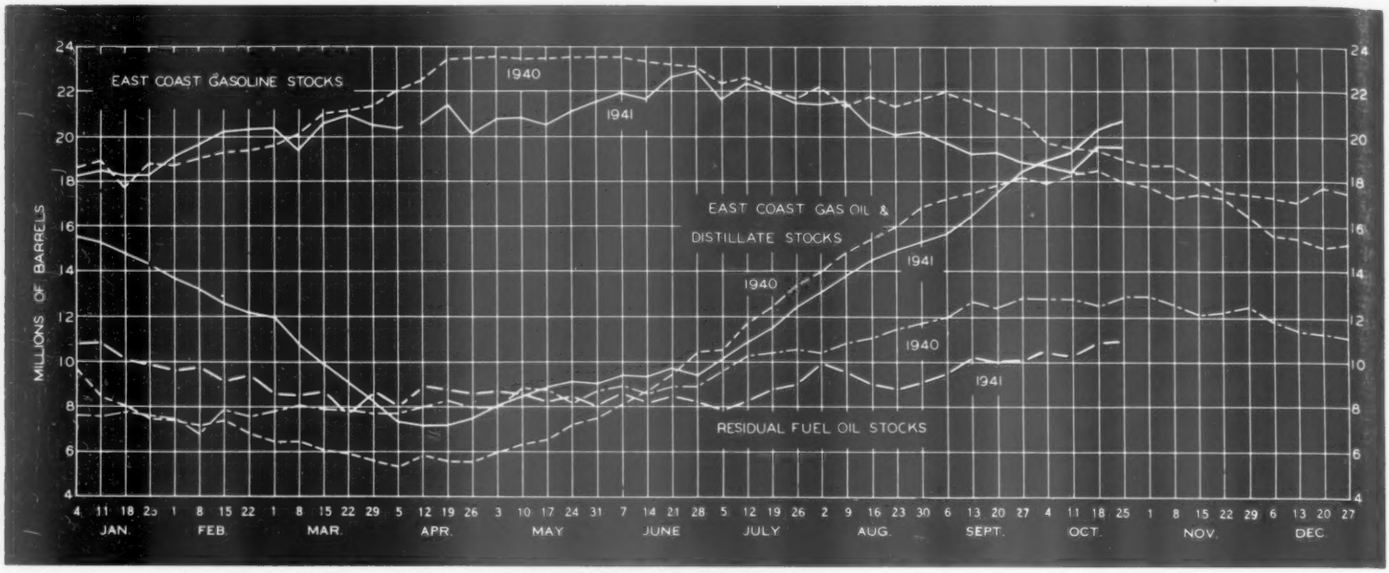
Canada Lifts Prohibitions On Diesel Installations

Special to NPN

TORONTO, Oct. 25.—Diesel equipment and diesel oil may now be sold freely in Canada. Oil Controller George R. Cottrelle rescinded on Oct. 22 that part of Order No. 004 which prohibited the sale and installation of diesel engines and the sale and distribution of diesel oil.

Prohibitions on the sale and installation of equipment for burning kerosine and stove oils, or the sale and distribution of such oils still apply.

BAROMETER OF EAST COAST REFINERY OPERATIONS AND STOCKS



East Coast Stocks 1,301,000 Barrels Above 1940 Figure

By Teletype
NPN News Bureau

NEW YORK, Oct. 28—East Coast oil "shortage"—declared ended by Petroleum Co-ordinator Ickes last week—wound up with total inventories at 1,301,000 bbls. above same week last year, according to figures compiled by American Petroleum Institute. Total stocks on Oct. 25 were 51,225,000 bbls., as compared with 49,924,000 bbls. a year ago; this was also 579,000 bbls. above previous week.

Gasoline stocks stood at 19,547,000 bbls. on Oct. 25, up 589,000 bbls. from last year but 12,000 off from previous week.

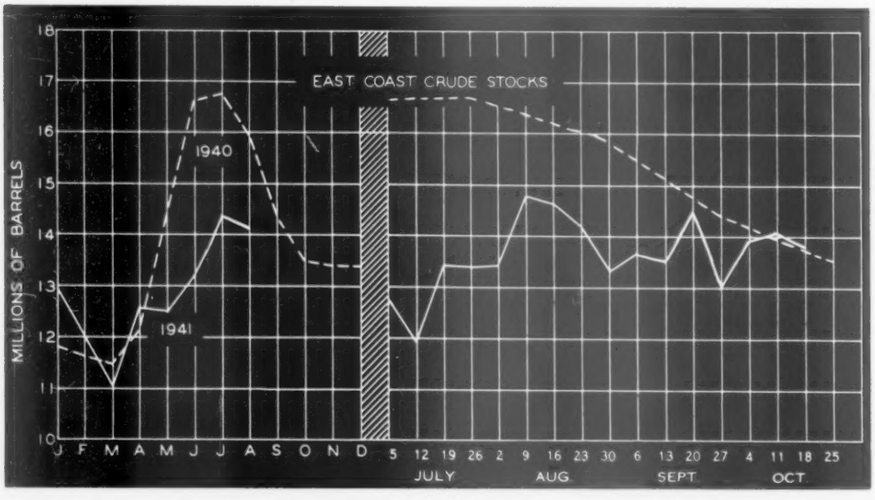
Gas oil and distillate stocks were 15% above 1940 figures, totaling 20,771,000 bbls. as against 17,996,000 bbls. last year. During the week stocks increased 559,000 bbbls.

Residual fuel stocks gained 32,000 bbls. during the week but were still 2,063,000 bbls. below last year's level of 12,970,000 bbls.

East Coast Refinery Runs and Refined Stocks

(API 1941 and 1940 weekly figures, in thousands of bbls., representing 100% of refining capacity; 1940 figures are for nearest comparable 1941 dates. Beginning Aug. 16, 1941, stocks figures do not include shuttle or lease-lend material formerly reported as part of inventories)

Week Ended	Daily Avg. Crude Runs to Stills		Gaso. Prod. at Refineries		Stocks Finished & Unfinished Gaso.		Stocks Gas Oil & Distillate		Stocks Residual Fuel Oil	
	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940
Jan. 4	583	602	1,415	1,644	18,193	18,613	15,635	9,731	10,811	7,646
Feb. 1	548	538	1,538	1,508	19,062	18,715	13,731	7,386	9,543	7,432
March 1	558	540	1,412	1,433	20,383	19,624	11,905	6,457	8,536	7,865
April 5	601	530	1,645	1,517	20,322	21,982	7,425	5,306	7,984	7,751
April 12	583	595	1,606	1,614	20,633	22,476	7,190	5,804	8,897	8,017
April 19	536	578	1,601	1,485	21,411	23,386	7,208	5,640	8,659	8,217
April 26	537	595	1,456	1,542	20,177	23,417	7,641	5,574	8,483	7,979
May 3	611	535	1,651	1,469	20,787	23,615	8,004	5,975	8,717	7,948
May 10	593	576	1,610	1,270	20,810	23,429	8,515	6,351	8,562	8,771
May 17	570	590	1,628	1,333	20,587	23,487	8,879	6,598	8,156	8,752
May 24	603	573	1,584	1,321	21,157	23,618	9,122	7,218	8,467	8,115
May 31	574	585	1,635	1,463	21,657	23,603	9,060	7,615	8,012	8,646
June 7	600	577	1,708	1,411	21,965	23,588	9,548	8,036	8,578	8,953
June 14	558	590	1,603	1,456	21,705	23,357	9,405	8,745	8,109	8,551
June 21	587	606	1,487	1,669	22,620	23,206	9,725	9,526	8,450	8,844
June 28	600	561	1,645	1,492	22,888	23,043	9,421	10,401	8,240	8,842
July 5	602	532	1,672	1,382	21,698	22,286	10,035	10,521	7,911	9,654
July 12	644	560	1,733	1,439	22,364	22,671	10,835	11,775	8,262	10,270
July 19	570	558	1,642	1,535	21,932	22,054	11,511	12,460	8,775	10,365
July 26	593	563	1,600	1,496	21,555	21,846	12,389	13,415	8,972	10,460
Aug. 2	593	560	1,773	1,492	21,438	22,221	13,069	13,982	9,989	10,293
Aug. 9	610	577	1,642	1,540	21,686	21,317	13,782	14,739	9,638	10,865
Aug. 16	586	603	1,488	1,594	20,475	21,848	14,433	15,452	9,035	11,044
Aug. 23	615	591	1,688	1,606	20,094	21,373	14,896	15,967	8,791	11,590
Aug. 30	644	600	1,654	1,530	20,261	21,776	15,266	16,855	9,127	11,836
Sept. 6	629	583	1,664	1,530	19,803	21,930	15,671	17,232	9,498	11,987
Sept. 13	599	605	1,667	1,626	19,238	21,616	16,418	17,552	10,241	12,637
Sept. 20	605	604	1,790	1,489	19,394	21,114	17,960	17,779	10,042	12,381
Sept. 27	616	543	1,616	1,507	18,872	20,804	18,364	18,156	10,155	12,812
Oct. 4	640	542	1,722	1,345	18,579	19,848	18,906	17,918	10,482	12,830
Oct. 11	636	571	1,655	1,469	18,387	19,519	19,418	18,254	10,226	12,803
Oct. 18	684	547	1,968	1,528	19,559	19,477	20,212	18,444	10,875	12,582
Oct. 25	669	598	1,689	1,420	19,547	18,958	20,771	17,996	10,907	12,970



East Coast Crude Stocks

(Bureau of Mines figures; thousands of bbls.)

End of Month

1940		1941	
Jan.	11,827	Jan.	12,935
Feb.	11,644	Feb.	12,104
March	11,491	March	11,046
April	12,184	April	12,572
May	14,473	May	12,544
June	16,624	June	13,204
July	16,793	July	14,317
Aug.	15,937	Aug.	14,065
Sept.	14,392		
Oct.	13,573		
Nov.	13,490		
Dec.	13,489		

Week ended, 1941

Aug. 2	13,428	Sept. 13	13,507
Aug. 9	14,803	Sept. 20	14,575
Aug. 16	14,655	Sept. 27	*13,160
Aug. 23	14,194	Oct. 4	13,944
Aug. 30	13,384	Oct. 11	14,015
Sept. 6	13,710	Oct. 18	13,825

*Revised.

THE Editor's PAGE

Readers Comments and Opinions will be much Appreciated by—WARREN C. PLATT, Editor and publisher, Penton Building, Cleveland, O.

Just How Was the 'Shortage' Overcome?

THE East Coast gasoline and oil "shortage" is now officially at an end.

May that sad chapter of government's relation with a great industry be remembered by many at Washington as teaching the desirability of helping an industry to meet its own problems, rather than controlling that industry.

A great good to all would be done if the facts of how this "shortage" was actually ended, could be compiled and published. The Fact Finding Committee of the API, whose excellent and detailed report on the ill effects to the oil industry of transferring tankers to British war service was the tip-off to Ickes to jump in last spring, could well make a final report on just what the oil industry did and how well it did it.

The oil industry, as disclosed in that API report, not only had plans made as to how to overcome the shortage of tankers but had been at work on carrying out the plans, when Ickes jumped into the picture as "petroleum co-ordinator."

In the meantime we all have great responsibility and much work in fitting the oil industry into the country's War Defense plans. Let the industry be allowed to continue at that job without any more political circuses.

IT remains to be seen whether this industry responsibility can best be carried out through the intervention of a "petroleum co-ordinator" that has no authority except to "recommend", or whether it were better for the oil industry to have direct contacts with those agencies with authority, through suitable divisions of those agencies. Industry generally has found that the more directly it works with those in actual authority the quicker and better the job can be done.

Perhaps the question will be answered by the extent to which the petroleum co-ordinator subordinates himself and his personality to his excellent and able working staff.

Davies Again Denies Secrecy Policy

DEPUTY Petroleum Co-Ordinator Davies, at the meeting of the Independent Petroleum Assn. of America at Tulsa last week, undertook to explain the "open door" policy that his office seeks for all advisory committees, in contrast to the policy of secrecy that many of those committees are following.

Industry members of some of these committees claim that they have "orders from Washington" enjoining secrecy upon them. Mr. Davies several times has denied issuing such instructions. He repeats such denial at Tulsa.

It would seem to be a simple matter, therefore, actually to open these doors to the industry. Maybe they are open this week, if so we will soon learn as the committees meet next time.

Mr. Davies at Tulsa undertook to blame the oil trade press and the general newspapers for the complaints against the secrecy and said that "apparently the procedure determined upon has pretty thoroughly satisfied the oil men."

In this Mr. Davies has been misinformed. The oil press, in voicing objections to the policy of secrecy has been merely expressing the criticisms of those oil men of both major and Independent companies, who have not been on the committees and, as they said, they were not told anything that went on until it had been censored at Washington. Independent oil associations have also adopted resolutions protesting the secrecy.

MR. DAVIES and his associates and members of these secretive advisory committees, could bear in mind that these committees are really a part of government and do not belong to private industry. And Mr. Davies could also keep in mind, as he formulates his policies, the great and deep-seated suspicion and doubt that most business men and oil men hold as to the good faith, good intentions and even common honesty and truthfulness of the New Deal and particularly of its inner circle. Ickes did not lend anything to his own stature in the public eye nor to the New Deal, by many of his statements and much of his conduct during the "shortage" era, as is attested by the criticisms in newspapers all over the country.

Mr. Davies' publicity policy therefore, as well as the conduct of his whole staff, should be that most effective in overcoming the handicap set up by the New Dealers and in instilling confidence in the oil men and in the general public, for his office and its work. He will find it necessary, we believe, to get rid of all suspicion of secrecy, by throwing all doors wide open, if he is to do the job that he is undertaking.

And the oil men who are on these committees and seemingly are contributing to this secrecy policy, might well bear in mind that there probably would not have been a Madison case, or at least it would have been much simpler and easier to have worked up the oil men's defense in that case, had it not been for the policy of strictest secrecy that Ickes himself arbitrarily imposed on the late P. & C. Committee and all its advisory committees and which the P. & C. Committee and members of other committees so foolishly followed. Ickes asked in those code days what he had no law nor right to ask. In this present emergency the only secrets should be those that are strictly and truly military secrets.

WITH all the safeguards that the petroleum co-ordinator thinks he has set up to avoid the Department of Justice pouncing upon the oil men for alleged violation of the anti-trust laws, in view of the devious policy of the anti-trust division, and of the increasing multitude of activities oil men will have to carry on in this war period, there undoubtedly will be many opportunities for the New Deal attorneys to horse-up more untrue cases against the oil industry, just as it has in the past and just as it has against other industries.

A strictly open door policy to these committees will, of course, not be an absolute defense against any unscrupulous attacks by the New Deal, but it will help.

But above all these reasons, every oil man has an absolute moral and legal right to know at all times just what those representing him in government are thinking and contemplating doing and then actually attempting, in regard to his business.

Equipment Efficiency in Jeopardy

PROBABLY the most important question at the moment before oil marketing men is what they are going to do for repair and replacement parts for existing equipment, and what for new equipment to take care of the steadily increasing consumption of petroleum products. Gasoline demand increase for November is estimated at 13%.

That question is discussed in some de-

tail in a special 3-page "Appeal, for a correct valuing" of oil marketing and its equipment as needed for War Defense, published beginning on page 19 in this issue.

The problem needs immediate study for facts proving the importance to War Defense and to our necessary living of the industry's system of distributing petroleum. There has been too much careless talk against competitors who are said to be "unnecessary" and "wasteful" and "we can get along without 'em."

Too many people have been looking at and talking about oil marketing from their purely personal and even selfish angle. It should be studied in its entirety when there will be developed facts and arguments that will justify government authorities in granting the oil marketer all the equipment he needs to keep his business properly fulfilling its necessary function.

A number of state oil jobbers' associations are making such a study. But all should do so, then those facts should be compiled on behalf of all in oil marketing.

Will you please read and study the "appeal" printed in this issue?

To Which Oil Men Say "Amen"

"The propagandists for federal regulation should find no support for their proposals through any failure on the oil industry's part.

"We should not permit administration to supersede co-ordination.

"When we bury the corpse of this terrible war, let us make sure we do not bury also the corpse of free enterprise."

"The Independents who furnish the competitive element in business, must be preserved."

Frank Buttram, president, to annual meeting of the Independent Petroleum Assn. of America, Tulsa, Okla., Oct. 20, 1941.

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DEATHS

H. R. Smith

H. R. Smith, 65, secretary-treasurer of the Louisville Refining Co. and vice-president of the Superior Petroleum Co., died Oct. 25 at his Louisville, Ky., home following a heart attack. He leaves a widow; a son, H. R. Smith, Jr., superintendent of the laboratory for Louisville Refining; and 2 married daughters. For a number of years Mr. Smith was vice-president and a director of the Kentucky Petroleum Marketers Assn.

* * *

Clyde L. Koch

Clyde L. Koch died Oct. 17 at his Rocky River, Ohio, home. He was connected with the Canfield Oil Co. during the past 20 years and was in the retail sales promotion department at the time of his death. He leaves a widow, Mrs. Gertrude Koch, and two sons, Clyde Jr. and Robert G.

* * *

Maurice W. O'Brien

Maurice W. O'Brien, 67, died Oct. 24 at Cottage Hospital, Santa Barbara, Calif., after a brief illness. He was president of Seaside Oil Co. He leaves a widow.

In 1920 a dollar bill purchased 3½ gallons of gasoline. Taxes amounted to an average of only three cents. Now a dollar bill will buy an average of seven gallons of gasoline in the United States. Taxes, however, stand at 40c, making $1 worth of gasoline cost $1.40.

WASHINGTON DIRECTORY

There are no changes this week in NPN's Washington directory of oil agency headquarters. For listing of these offices see NPN Oct. 15, p. 20—Ed.

Crude Hike Needed, Say Oil Producers

NPN News Bureau

TULSA, Oct. 27.—Views of the Independent Petroleum Assn. of America on 25 issues—including the need for higher crude prices to encourage search for more oil—are now on record.

Working almost endlessly for 4 days, the I.P.A.A. resolutions committee drafted a tentative expression of the association's opinion on these 25 points. Longest was the proposed resolution on crude price. The membership took it apart, analyzed, revised, embellished and finally adopted it. But only after two hours' discussion.

Frank Buttram, Oklahoma City, I.P.A.A. president, seemed to express the consensus when he stated that he was "frightened" at the crude price situation.

Unless a firm stand is taken on the price situation, the industry will be held responsible and suffer the penalties if and when "we can't produce crude in sufficient volume to meet demand," he added.

After some revision, the membership approved "certain facts that must be recognized" as part of the price resolution. Briefly they set forth that (1) if greater reserves are not discovered it will be necessary to produce many flowing wells in excessive amounts and destroy much of the great benefits attained through conservation, (2) crude price must be high enough to prevent premature abandonment of stripper wells, (3) rate of discovery of new reserves in recent years has declined during periods of "inadequate prices", and (4) crude price must justify further exploration.

Charles F. Roeser, chairman of District No. 3 advisory committee, revealed that result of a survey made by a "strong" committee indicated a 50c per bbl. price increase is necessary. Many agreed with this survey, while others suggested the 25c minimum. One suggestion for a $2.00 advance, while rather jokingly made, was based on a look "down-the-road."

President Frank Buttram stated a price of $1.60 to $1.75 per bbl. for 36 gravity oil is now necessary to justify cost of discovery. This price, he said, was predicated on an incomplete cost study being made by I.P.A.A.'s statistician. It would require an advance of from 43 to 58c per bbl. to bring present prices to the suggested level.

As finally approved, "Fact No. 5" lacked definite suggestion for a minimum crude price advance and merely set forth that "present price of crude oil is sufficient. Increase of 10 to 12c has been mentioned as possible increase adequate for this program. Such an increase is grossly inadequate."

Resolution part of the document instructed that the 5 facts be brought to the attention of interested agencies "to the end that an adequate price of crude petroleum and its products be established sufficient to stimulate greater exploration for new reserves and retard premature abandonment of reserves now produced by wells of settled production."

Included in the 25 resolutions adopted by I.P.A.A. were those calling for: a permanent Connally "hot" oil bill; fullest possible co-operation with Petroleum Co-ordinator's Office; purchase by local and federal governments of those products of domestic origin when possible, protest as invasion of states rights any action of federal government to obtain titles to submerged tidelands; urged continuation of the depletion allowance; urged that PCO, SPAB, OPM and other agencies appreciate importance of providing oil industry with sufficient and continuing supply of materials in order that the industry may furnish peace and war time needs; urged PCO to investigate hoarding of oil industry equipment and suggested action be taken in such cases to make excessive quantities available to others; suggested Interior Department open the public domain to oil and gas development by adopting a suggested procedure; urged domestic oil production be held within limits of total consumptive demand and each state be assured of its equable part and proper share of that total; urged adoption of legislation placing an import ceiling based on 4.5% of current domestic demand and take steps to establish more equitable import duties; requested legislation sanctioning voluntary agreements within the industry; suggested hearty support of Interstate Oil Commission; and provided for appointment of a Committee for National Defense charged with studying recommendations made by PCO

* * *

Davies Tells PCO's Aims, Urges Industry's Support

NPN News Bureau

TULSA, Oct. 25.—Objectives and policies of the Petroleum Co-ordinator's Office were discussed at length by Deputy Co-ordinator Davies, speaking Oct. 21 at annual convention here of Independent Petroleum Assn. of America. He talked of PCO's attitude on publicity, crude prices, federal control and need for a drilling campaign.

Excerpts from text of Mr. Davies' speech on these points and discussion of PCO's objectives, follows:

Joint Objective Stated

"I have said before, and I repeat here for emphasis, this task of co-ordinating the oil industry for national defense is a dual undertaking—a joint responsibility of Government and Industry. We have a single aim—to mobilize the resources of the oil industry for national defense. It is you who must produce, transport, refine and distribute the oil needed for defense and essential civilian uses; ours is the task of advising, recommending and co-ordinating this effort to the end that it may best serve the national emergency objective.

"In a very real sense the Office of Petroleum Co-ordinator is the agent of the industry, representing its interests before the many Federal bodies concerned with oil in some phases during the emergency. We are at the same time the agents of the Federal Government in representing to the industry at large and to the various state regulatory bodies, the needs of the defense program with respect to oil. Functioning in this way, it is our purpose to attain the defense objectives of the Federal Government, and do so with protection of the interests of the petroleum industry.

Asks for Support of Ickes

"Upon that basis I count upon all of you for a sympathetic understanding of the difficulties of the Office of Petroleum Co-ordinator. Upon that basis I ask for the Co-ordinator your co-operation and support. I submit that the Co-ordinator is entitled to this, and I feel certain you will agree with me. So long as the task is a joint one and so long as it is undertaken with proper regard for the interests of the industry, such support is no more than fair play."

"The oil industry must now realize that it is no longer able to move normally. New and enormous demands are upon it for the products necessary to run the machinery of defense industry; unforeseeable expansion in military equipment creates a requirement for aviation and other products suddenly far and beyond anything contemplated; special products to keep pace with the technological changes of wartime are called for on short notice—and so it goes. There is no proceeding on the basis of business as usual in oil. We have started late. There is much that still needs urgently to be done—and quickly.

"Need for Co-ordination"

"In affecting any such adjustments in our oil economy as demanded under these conditions, I wonder where some of those who express doubt as to the necessity for the co-ordinating agency, would in fact find themselves in the absence of it? Quite aside from the necessity for it in order to accomplish the defense objective, I ask how the individual unit in the industry, and particularly the smaller unit, would likely fare without a federal agency directing the readjustments.

"In addition to other considerations, I should think that upon reflection it would be only too clear that undirected forces would only visit great distress upon a vast number in the business—perhaps the greatest upon the very ones that hesitate, now, wholeheartedly to accept the co-ordinator plan. Before the emergency is over, I prophecy that these same people will be only too glad that there is a Co-ordinator, to preserve the competitive structure of the industry upon a just and equitable basis, with protection against monopoly and unfair advantage."

Discusses Federal Control

While some in the industry concede the need for co-ordination during the emergency, said Mr. Davies, they entertain doubts as to the future, asking "How far is federal control going?"

"I would respond to these questions," said the deputy co-ordinator, "by first asking, 'What do they mean by *federal control* insofar as the Office of

Petroleum Co-ordinator is concerned?'

"Such federal controls as exist today with respect to the operation of the oil industry do not reside in our office. To illustrate: The Maritime Commission has been granted, by statute, authority over all ships, which, of course, includes tankers. The Office of Production Management has been granted statutory powers over priorities and allocations, which of course includes the critical materials which the oil industry needs and the critical petroleum products which it sells. The Office of Price Administration has been granted authority over price, which again includes the goods and materials which the oil industry buys, as well as the numberless products which it sells. In most of the producing states commissions have been granted statutory authority to regulate the production of oil, and most of these states are parties to an Interstate Oil Compact approved by the Congress of the United States.

"These are examples of what I would call control, and are only a few of many I might mention. None of these controls resides in the Office of Petroleum Co-ordinator. Acting alone and without co-ordination, however, these many agencies could not hope to meet the nation-wide problems of the oil industry in this emergency on the industry-wide basis which is now required.

Oil Is Vital Cog

"The petroleum industry is such a vital cog in our defense preparations that it was necessary either to establish some nation-wide central statutory control of the oil industry which might never be abandoned, or to supply a means of knitting together the activities and actions of each unit in the industry and each of the various federal and state regulatory bodies for the purpose of enabling them to deal effectively and intelligently with the defense problems of the entire industry.

"In so far as the states are concerned, the Office of Petroleum Co-ordinator considers itself fortunate that most states have regulatory bodies to whom it can refer the many questions for which solutions can best be devised by them within their own states. As an example, we sent out our recommendation No. 13, relating to distillate pools, to all of these state regulatory bodies and to the Interstate Oil Compact Commission in the belief that they would be fully capable of both conserving critical materials and increasing ultimate available supply of distillate production so vitally needed for aviation fuels.

"With respect to the many federal agencies whose emergency controls inevitably affect your operations directly, may I point out that you alone, of all the industries in America concerned with the national defense effort, have a central agency to represent you, to report your needs, to plead your case with the other agencies—the Office of Petroleum Co-ordinator. This is not my conception of federal control. The Office was not so organized; it is not so managed. It will not so develop if we co-operate promptly and effectively and do the job that must be done.

Surveys Needs for Materials

"Let me further illustrate what this means.

"Our office is at this moment in the process of preparing and presenting to the Office of Production Management detailed estimates of the amounts of hundreds of critical materials needed by thousands of companies and individuals in all branches of the petroleum industry. You oil men know that as large a proportion as possible of such materials must be made available to the oil industry if it is to continue to supply the greatly augmented defense and civilian needs of this nation. But the Office of Production Management is not composed of oil men. The facts with respect to the oil reserves of this country are not necessarily within their personal knowledge. Moreover, they are extremely busy men, faced with the defense problems of hundreds of other industries. With your help, it is our job to bring to their attention all of the facts on oil that should be given weight in their consideration of the problem. Unless this is done, it is, I think perfectly obvious that you could not expect an informed and intelligent treatment.

Need New Discoveries

"The search for and the development of oil reserves requires a large quantity of critical materials which we must try to secure for you in competition with other vital industries. You and I know that the discovery of a new and important oil field has become a costly and difficult task. I do not refer to the substantial successes of 1,000,000-bbl. pools, or even 10,000,000-bbl. pools. With our present consumption, at the rate of a billion and one-half barrels annually, we must find numerous fields of 100,000,000 bbls. or more, merely to retain our present reserve position without regard to the desirability of increasing our known reserves in proportion to the annual increase in consumption.

"Here our efforts in your behalf are complicated by the prevalence of a belief which we in the oil industry have thoughtlessly fostered, that we had a virtually unlimited supply of oil producible for an indefinite period in whatever amount the emergency might call for, merely by opening the valves of wells already drilled. Most of you will agree with me, I think, that a rate of production much in excess of our present output could not be long maintained without additional drilling, and we are experiencing today a rate of consumption not even imagined a year ago. The Office of Petroleum Co-ordinator, with your help, will do its utmost to obtain for the industry its full share of the materials available for this vital development of additional reserves.

Discusses Crude Price

"While on the subject of present productive capacity and the necessity for additional reserves, I would like to touch briefly upon the problem of price.

"For the additional drilling which must be done, and particularly for the hazardous wildcatting that must be continued and increased, you will need not only critical materials but also crude price levels which warrant expensive exploratory search and deep development—this at a time when the national economy would be strained by merely inflationary price movements. To prevent inflation, and at the same time to have a price sufficient to find the oil we need, calls for your presenting an adequate showing with respect to the need for finding additional reserves and the costs of discovery and development. Prices fall within the jurisdiction of the Office of Price Administration, but the Petroleum Co-ordinator is charged with the duty of making such recommendations to that Office as he deems necessary, in order to assure an adequate supply of oil. Such recommendations must of course be based upon facts, and armed with the facts, the Co-ordinator is not averse to making recommendations as to price—even increases in price—in fact, regards this as a duty of his Office.

'Tell Public the Facts'

"In this connection, I would like to add one further thought. If the facts indicate that some upward adjustment in crude oil prices is justified, the case must be made not only to the various governmental agencies, but also to the public. For, as I have already pointed out, the public has been led to believe that the rate of recovery of our known oil reserves is greater than most of us in the oil industry believe to be possible. If the public has not the facts, or has the wrong facts, the industry has here some work to do."

Discusses Publicity Policy

On the question of publicity for committee activities—about which there has been some confusion with some committee members declining to discuss such matters, saying that on orders from Washington they could not talk—Mr. Davies said:

"When our petroleum advisory committees were first organized, we discussed with the industry's representatives the question of publicizing the activities of the committee and, with the industry, developed rules of procedure which were thought best to answer our purposes. These purposes were to keep the industry and the public fully informed and at the same time to protect against the dissemination of fragmentary or misleading information. To quote one of the clauses in Recommendation No. 7, drawn up at that time: 'No good could be served the public, and confusion would be bred, if committees were to undertake publicly to advocate or discuss yet unadopted policies or actions.' This, it was reasoned, would go even beyond the famous newspaper slogan, 'The news before it's news'—it would extend to 'News that perhaps never will become news'.

"Apparently the procedure determined upon has pretty thoroughly satisfied the oil men. At least on this score we have heard very little from them. However, some of the trade papers have been decidedly critical, and we want to take note of that dissatisfaction and make answer to it.

'Committeemen Free to Talk'

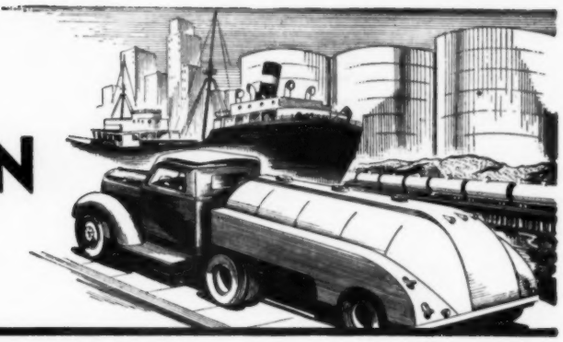
"Once and for all, let it be understood that the Office of Petroleum Co-ordinator enters no objection whatsoever to the District Advisory Committees giving interviews to the press, or disseminating in any way they see fit throughout the oil industry information on any actions taken or plans contemplated by these industry committees. Any matters deemed by the district committees to be matters of current interest, including even proposals not yet studied, may be discussed as they wish, with whom they wish, at their discretion. As to orderly procedure, we are content to rely upon the committees and to leave wholly to them the question as to how best to function in this respect.

"Consistent with this attitude, we have called upon the industry committees for their suggestions as to publicity routine, and all have not yet responded. However, the issue in each case will be settled on the basis I have described, namely, by leaving it to the discretion of the committees themselves. This will all be formalized with written directions to the committees as promptly as the balance of the committees responses come in.

Urges Confidence in Committees

"The Office of Petroleum Co-ordinator is cognizant of the fact that some matters discussed in committee meetings may involve confidential items concerning the position of one or another of the companies which the companies are willing to disclose for the benefit of the committee members in their industry deliberations, but are not willing to make public as a matter of general information. Upon such questions the discretion of each committee is final. The Office of Petroleum Co-ordinator has complete confidence in the district advisory committees and trusts that the industry, too, reposes full confidence in them."

OIL TRANSPORTATION



Regular Lubrication Urged To Cut Replacement Costs

NPN News Bureau

WASHINGTON, Oct. 25.—"Oil and grease costs are small compared to the cost of replacement parts."

This is a portion of the appeal made today to fleet operators and owners of single busses and trucks, by John L. Rogers, chairman of the Central Motor Transportation Committee, to Division of Transportation, Office for Emergency Management.

Mr. Rogers' appeal is a result of his recent warning that a possible trucking shortage is facing certain sections of the country.

Urges 'Fixed Lube Schedules'

Costly road repairs can be avoided by "good servicing programs" this transportation man said in a report to Defense Transportation Commissioner Ralph Budd. Good servicing also adds longer life to vehicles, he said.

"Fleet operators should observe carefully fixed lubrication schedules based on manufacturer's recommendations, supplemented, of course, by their own experience, Mr. Rogers said. "Such schedules should coincide as far as possible with preventive maintenance schedules as to minimize lay-up time of vehicles. Maintenance operations usually can be performed during hours when vehicles normally are in the least demand thereby greatly increasing their availability."

'Crisis is Automotive'

The remainder of Mr. Rogers' statement follows:

"The Central Motor Transportation Committee urges all owners who do not maintain their own repair facilities to insist upon adherence to the fundamentals of sound preventive maintenance practices by the servicing concerns with which they deal.

"The crisis confronting the nation's producing facilities is in large part automotive. The owners of our millions of commercial vehicles can contribute tremendously to the national defense effort by learning more of the art of preventive maintenance and by insisting on the application of its fundamentals."

"I am especially interested in seeing such a plan adopted by the small fleet operator or the owner of a single bus or truck," said Mr. Rogers, "because this group operates most of the nation's four and a half million commercial vehicles and therefore is the one which can effect the greatest savings."

"Our supply of rubber, a vital defense factor, must be jealously protected," said Mr. Rogers. "Commercial vehicle operators can do their part by checking tires frequently for cuts and bruises, keeping them fully inflated at all times, and when the treads wear smooth, sending them to a responsible tire re-capping firm for tread rebuilding. This program, carefully observed, should increase tire life almost a third.

Outlines 'Speed Up' Plan

Earlier in the week, Mr. Rogers said: "It is vital, not only in the interest of prompt movement of national defense material but also to insure a steady flow of civilian merchandise, that shippers and receivers of motor truck freight give careful thought and attention to ways and means of obtaining maximum use of existing motor trucks.

To do this, Mr. Rogers recommended "that shippers and receivers increase their loading and receiving facilities, if necessary to speed the loading and unloading of shipments; co-operate with trucking concerns in scheduling shipments so that loading docks will not be congested; and stop the practice of using trucks for storage purposes."

Meanwhile, OPM's Priorities Director Nelson announced that curtailment of light truck production for civilian use would be continued through December. Original call was for a 9% curtailment from August through November.

Tank Cars to East Still Rising—PCO

NPN News Bureau

WASHINGTON, Oct. 25.—Continued rise in tank car movement of petroleum and petroleum products into District 1 was reflected this week in figures from Petroleum Coordinator's Office which showed a total of 4396 cars for week ending Oct. 18. This is 65 more cars than the previous week.

Actual oil shipments for week ending Oct. 18 totaled 989,100 bbls. or 141,300 bbls. daily, based on average tank car load of 225 bbls.

Car shipments by companies were: Atlantic Refining—416; Cities Service—199; Gulf—281; Pan-American—525; Pure—68; Shell—394; Sinclair—593; Socony-Vacuum—180; Kentucky Standard—54; Jersey Standard —1199; Sun—41; Texas—288; Tide Water—158.

Distillate Rail Cut Date Moved Up to Nov. 5

TULSA, Oct. 27.—New effective date of Nov. 5 has been announced by rails on reduced rates for distillate fuel oils shipped from southwestern refining centers to destinations in Western Trunk Lines territory. Originally scheduled to take effect Nov. 20, action of Interstate Commerce Commission in granting sixth section application enables publication of the rates 15 days sooner.

In some quarters, it was felt that the reductions of approximately 10% provided in the Nov. 5 rates are not sufficient. Many shippers of distillate fuel contend reductions of 18 to 20%, to a level 80% of present light oil rates, would be a "fairer" rate basis. While discussions have taken place between widespread consumer groups on this formula, no official action has been taken. It is believed that any action will be withheld until after Nov. 5.

September Oil Trucking Gains 36.3% Over 1940

NPN News Bureau

WASHINGTON, Oct. 27.—Motor carriers of petroleum products hauled 6% of the 1,628,173 tons of revenue freight transported by motor truck in September, the American Trucking Assn. reported today.

The A.T.A. said the over-all volume of revenue freight moved during the month smashed all previous records, registering a 2.2% increase over August and a 27% rise over the volume of last September.

Transporters of petroleum products, however, reported a decrease of 7.8% from August, but showed a 36.3% increase over last September.

The A.T.A. statement was based on reports from 226 motor carriers in 39 states.

ICC Plans To Reopen Case On Crude Pipeline Rates

NPN News Bureau

WASHINGTON, Oct. 25.—Hearings will be reopened by Interstate Commerce Commission on its previous findings,

Pipeline Negotiations May Start Again Soon

WASHINGTON, Oct. 25.—Plans for a resumption of negotiations in the three pending Elkins Act pipeline suits may materialize soon, it was learned here this week. However, there remains no indications of a quick settlement.

Charges in these suits hold that dividends to shipper-owners are rebates. A few weeks ago, developments reached the stage where settlement was expected on a basis whereby oil companies would receive a 7% return on money invested in the pipelines. And at a later date, that which constitutes a 7% return was to be decided by Interstate Commerce Commission. However, terms in this settlement could not be agreed upon by both sides and negotiations were temporarily dropped.

Dec. 31, 1940, that 8% is adequate return on investments in crude oil pipelines and that earnings of 21 pipeline companies are in excess of a fair return (reduce pipeline rates and gathering charges investigation, ICC Docket No. 26570). Reopening date for the case has not been set.

Atlantic To Launch Tanker On November 15

Special to NPN

PHILADELPHIA, Oct. 27.—Atlantic Refining Co.'s new Tanker, the S. S. John D. Gill, will be launched Nov. 15 at the yards of the Sun Shipbuilding and Dry Dock Co. at Chester, Pa., Robert H. Colley, president of Atlantic announced here today.

The vessel will be named in honor of John D. Gill of Philadelphia, a director and economist of the company, and will be sponsored by Mrs. Gill. This tanker will be the seventh built by the company during the last four years in its fleet expansion program and will increase the Atlantic fleet to 26 vessels.

The tanker will be launched 18 weeks after keel was laid; has an overall length of 544 feet; weighs 19,200 deadweight tons and has a capacity of 154,761 bbls. or 6,500,000 gals.

Hearings Are Scheduled On 40c Truckers' Wage

NPN News Bureau

WASHINGTON, Oct. 28—A public hearing will be held here on Dec. 1 in connection with the 40c an hour minimum wage recommended recently by the Property Motor Carriers Industry Committee, the Wage Hour Division of the Labor Department announced this week.

Persons wishing to appear in support of, or opposition to, the recommended wage should file notices of their intention with Gen. Phillip B. Fleming, Wage-Hour Administrator, not later than Nov. 24.

An attorney in the wage-hour division, who has been closely associated with the proceeding, said the recommended wage applied primarily to "for-hire" truckers and does *not* cover private carriers in the oil industry.

"Generally speaking," he told NPN, "the recommendation does not cover private motor carriers owned by a manufacturer in an industry." He pointed out, however, that private carriers would come under wage regulations issued for specific industries, but such a regulation has not been issued for the oil industry.

The basic minimum wage at present is 30c an hour. The Motor Carrier Committee, composed of representatives of truckers, labor and the public, recommended the increase after holding a hearing.

Temporary Control May Be Permanent, 'Strippers' Warned

NPN News Bureau

TULSA, Oct. 27.—Whether or not the oil industry has temporary or permanent federal control rests largely with the industry, legislatures and the regulatory bodies of the oil producing states, Burdette Blue told members of the National Stripper Well Assn. in annual session here last week.

"Peace, not war, has characterized the history of this country," Mr. Blue said. "Also temporary and emergency controls show an increasing tendency to become permanent. It is therefore timely now to anticipate a termination of the present emergency and when that occurs that a further effort will be made to pass the Cole Bill or some similar legislation.

"Admitting our delinquencies in the past, but at the same time bearing in mind the progress we have made, and continue to make, the nub of the whole question of permanent federal control, as distinquished from temporary emergency federal control, is this:

Should this one industry be singled out as the guinea pig on which to experiment when such a laboratory test will, in principle and effect, do violence to all of our education, environment and inherited ideas in regard to a competitive and capitalistic system and a system of free enterprise, and our belief in a proper measure of loyal self-government, and the rights of the various states?

"The oil producing states and the industry have with some vehemence answered 'No.'"

"Whether we like it or not we are, as already stated, confronted with a fact accomplished—temporary federal control of the oil industry. But the selection by the co-ordinator of personnel of the highest type, his words and his deeds would appear to constitute adequate assurance. If the industry responds in similar vein it should not be unduly harassed during the period of the temporary control."

Stripper Well Group Elects Officers

NPN News Bureau

TULSA, Oct. 25.—Following men were elected to office by National Stripper Well Assn. at annual meeting here:

Charles P. McGaha of Wichita Falls, Fain-McGaha Oil Corp., was re-elected president as were H. B. Fell of Ardmore, Simpson-Fell Oil Co., executive vice-president and Howard J. Whitehill of Tulsa, Whitehill Oil Corp., secretary-treasurer.

Vice-presidents are Guy T. Berry, Independence, Kanas.; Richard Fenton, Los Angeles; Wirt Franklin, Ardmore; A. H. Ledbeter, Mount Pleasant, Mich.; Harry Leonard, Roswell, New Mex.; Lee Mulvihill, Robinson, Ill.; W. H. Keffer, Ashland, Ky.; and Ralph T. Zook, Bradford, Pa.

Equipment Price-Cutting Enjoined by Court

CLEVELAND—Decree enjoining sale of "Lincoln" trade marked lubricating equipment, except at prices established by Lincoln Engineering Co., has been entered in New Jersey state chancery court against Ufert Auto Parts Service, Inc., Trenton, N. J.

Commission Hikes Texas Oil Quotas

Special to NPN

AUSTIN, Oct. 25.—Texas oil men are looking forward to producing 39,285 more bbls. of oil daily in November than they did in October, following the Texas' Railroad Commission's production order issued Oct. 23.

The commission, as it did last month, overrode the U. S. Bureau of Mines estimate of demand in ordering the large production.

The order apparently was a result of Chairman Ernest O. Thompson's demand at statewide oil hearing to turn the oil wells loose and get crude above ground for any possible emergency. The other two commissioners, Jerry Sadler and Olin Culberson, opposed Thompson at the hearing but all three signed Thursday's order.

Texas' authorized production will be 1,533,283 bbls. daily, compared with the Bureau of Mines estimate of 1,454,700. Actual production, however, due to shutdown days and a normal underproduction of 3.5%, will be about 1,479,618 bbls.

The commission also lifted one shutdown day, making eight for the month. They will be Nov. 2, 8, 9, 11, 16, 23, 27 and 30.

Chairman Thompson said the big order would allow the building up of stocks against Spring demand, which he said would be surprisingly high.

Navy Awards Bids On Motor Gasoline

NPN News Bureau

WASHINGTON, Oct. 27—U. S. Navy Department today announced awards on Schedule LL-900-6524, calling for 2,000,000 bbls. of motor gasoline, 64 minimum octane; 1,000,000 bbls. of vaporizing oil and 1,000,000 bbls. of burning oil. This was a telegraphic bid which opened Oct. 10. (*Oilgram*, Oct. 8 and 14).

Motor gasoline (minimum 64-octane ASTM) awards went to Maritime Oil Co. at $2.7825 per bbl. (6.625c per gal.), for a total of $278,250, lifting f.o.b. Houston; and to New Jersey Standard at $2.415 per bbl. (5.75c per gal.), totaling $241,500, lifting f.o.b. Aruba during October.

Award of 230,000 bbls. of vaporizing oil went to Jersey Standard at $2.1525 per bbl. (5.125c per gal.), 200,000 bbls. to be lifted f.o.b. Baytown, and 30,000 bbls. at Aruba during October.

Pan-American was awarded an $8500 contract for burning oil at 4.25c per gal. to be lifted f.o.b. Texas City during October.

Hike Louisiana Allowable

NPN News Bureau

TULSA, Oct. 28—A 7825-bbl. daily increase in Louisiana's November crude production allowable has been ordered by Louisiana's director of minerals, to 347,058 bbls. daily. Of the total, 276,380 bbls. was allocated south Louisiana fields; the remaining 70,678 bbls. to northern producing area.

Arkansas Oil & Gas Commission whittled Arkansas' November production allowable to 73,653 bbls. daily 2847 bbls. below Bureau of Mines' demand forecast and 2360 bbls. below October allowable.

FTC Backs Down in Pyroil Case

NPN News Bureau

WASHINGTON, Oct. 28.—Federal Trade Commission has dropped its complaint against Dean Ladd Kidder, La Crosse, Wis., trading as the Pyroil Co., closing the case "without prejudice," according to a brief FTC announcement. Two years ago, FTC issued a complaint disputing advertising claims that addition of Pyroil to gasoline or oil resulted in a more effective motor fuel or lubricant. FTC officials replied "no comment" when asked reasons for dropping the case.

Oil Jobber Named to Direct Conservation Law in Illinois

Special to NPN

SPRINGFIELD, Ill., Oct. 25.—Illinois has put its new oil conservation law under the supervision of 53-year-old Oil Jobber Clem Curtis of Oblong.

Originally a producer in one of Illinois' early fields, the new conservation director entered the marketing branch 15 years ago. His appointment to the $4200-a-year job was accompanied by a statement from Robert M. Medill, director of the state department of mines and minerals which is responsible for administration of the oil conservation law, that Clem Curtis is a man "who knows the oil business thoroughly."

Confers with Producers

Director Curtis' first official act was conference with a group of producers' representatives to discuss developments of the Johnsonville pool in Wayne county, scene of recent drilling activity. A more general discussion of details of the oil conservation program is scheduled for next week.

The new oil law which was passed by the legislature last spring, finds most of the Illinois producers indifferent because its provisions do not directly affect output. Opponents of proration succeeded in limiting the conservation law to restricting principally drilling methods, casing and plugging of wells, and establishing a formula for spacing of new wells—one to 10 acres over sand formations and one to 20 acres over limestone formations.

'Caution' Seen

Although the legislature did not clamp a lid on oil production, a tendency has been observed for both major and independent producers to proceed cautiously. Whether it arises from a fear that Petroleum Coordinator Ickes (who termed the Illinois conservation law a "joke") might order controlled production, or whether they are fearful that shortage of piping and other drilling materials may become worse, it is obvious that an effort has been made to curb waste.

An example of this occurred in Wayne county a few days ago when two Independent producers each planned to sink a well on adjoining 10-acre tracts. Before they had proceeded, they accepted the advice of the state department of mines and minerals and sank one well in the combined 20-acre tract and agreed to share the profits.

Production Tax Hit

In the meantime, the state's oil production as a revenue producer stood challenged by more than a dozen suits charging that the 3% oil production tax is unconstitutional. The suits, filed by major oil companies, land owners, pipeline owners, and operators, ask that a total of approximately $283,000 in oil taxes paid under protest be withheld from the general state treasury until constitutionality of the oil tax has been determined. Temporary injunctions impounding the taxes in the protest fund have been granted by the Sengamon county circuit court.

Clem Curtis directs conservation

The charge of unconstitutionality is directed at the tax whether viewed as a property or as an occupation levy. If according to the oil producers, the tax is a property tax it is unconstitutional on grounds that the law does not provide for proper valuation of the property by regularly constituted officers; if it is an occupation tax, then it is unconstitutional for not being uniform on all persons in the same class.

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PCO Advises Oil Industry On Applying for Priorities

NPN News Bureau

WASHINGTON, Oct. 27.—Further instructions to oil companies on applying for "priorities assistance" in obtaining materials and equipment have been issued by the Petroleum Co-ordinator's Office, which passes on all priorities applications from the oil industry and makes recommendations thereon to Office of Production Management.

"Most current needs can be satisfied through the use of the PD-1 form," said PCO's announcement, "and all persons connected with the petroleum industry should become well acquainted with this form as soon as possible." (*Facsimile of the PD-1 form for applying for priority rating was printed in NPN, Sept.* 10, 1941, *p.* 23-24 —*Ed.*)

"A great deal of care has been given by the Office of Production Management to the drafting of the PD-1 form," the PCO added. "When it is properly made out it will accurately present the urgency of the applicant's needs. This will permit the Office of Petroleum Co-ordinator to recommend to the Office of Production Management a rating that will meet the requirements of the case as indicated."

Important Points Cited

The PCO then cited the following as "vital points" in the filling out of a PD-1 application form:

1. A description of the material should be given similar to the description on a purchase order, i. e., the generally understood and acceptable description ordinarily used in the trade.

2. Be sure to state cost of material.

3. Delivery dates must be shown so that the needed material will be supplied when it is to be used and not before.

4. The name of only one Supplier should be shown. The name of the producer or manufacturer of the material can be given as the Supplier if the name of the supply house, through which the material is to be delivered, is added. The order number should be the supply house's order number and not the purchaser-user's order number.

5. State how material is to be used. If information can be shown by plat, it would be advisable to do so. When the material is to be used in a well or wells, furnish plat of location and enough of surrounding area to show spacing pattern. Plat should indicate, with appropriate symbols, all wells on the lease or leases in question, and also on the offsetting leases. The well symbols used should identify specifically: (a) Location. (b) Drilling wells, and (c) producing wells.

6. State specifically how the use of the material is essential to National Defense. A general statement such as, "Petroleum is essential to National Defense," is unsatisfactory. Show what results are actually expected from the use of the necessary scarce material.

7. The inventory of the requested material must be shown. This inventory must include all the material owned by the parent company or any of its subsidiaries, and all material on which the company has any right or option to claim ownership. Under this heading must be included all the requested material which can be regarded as being owned by the company no matter where it may be located.

8. Notarize four copies and mail them to the Office of Petroleum Co-ordinator. The fifth copy is to be retained for your files.

9. Announcement was made on October 1 by the Director of Priorities of the Office of Production Management that those who use PD-1 forms may reproduce such forms if convenient and desired. The announcement stated that, "Anyone who reproduces Form PD-1 must, however, follow exactly the phraseology, the size, the format, and the color of the official blanks furnished by the Division of Priorities."

Procedure Under P-22

Outlining the procedure to be followed in obtaining a preference rating for repairs, maintenance and operating supplies under Order P-22, the PCO's statement said:

How to Obtain Preference Rating for Material for Repairs, Maintenance and Operating Supplies

On October 16, 1941, the Office of Production Management issued Order P-22 which grants an A-10 rating for Repairs, Maintenance and Operating Supplies for the Production, Refining, Transportation (excluding pipelines), and wholesale Marketing Divisions. This rating is extendible from Supplier to Supplier and is designed to enable each operator to meet his immediate requirements for material and equipment.

"Repairs" means the restoration of an Operator's property and equipment to a sound working condition when such property or equipment has been rendered unsafe or unfit for service by wear and tear, damage, destruction of parts, or similar causes.

"Maintenance" means the up-keep of an Operator's property and equipment in sound working condition.

"Operating Supplies" means any Material which is essential to the operation of an Operator's business and which is consumed in the course of such business, including without limitation, fuel, lubricants, catalysts, and small perishable tools, *Provided:* it shall not include any Material which is physically incorporated, in whole or in part, into any product of the Operator, or into any Material which the Operator distributes to or stores, transports or services for another person.

The terms "Repair", "Maintenance", and "Operating Supplies", *do not* include Material:

1. for the improvement of an Operator's property or equipment through the replacement of Material in the existing installation with Material of a better kind, quality or design;

2. for additions to, or expansion of, such property or equipment;

3. which is of a type not heretofore carried on the Operator's books under "Repair", "Maintenance", "Operating Supplies", or the equivalent.

Order P-22 cannot be used to acquire additional equipment even though the additional equipment may be considered as maintenance.

A Supplier cannot use Order P-22 to acquire material for inventory to be used by his customers in case of breakdowns. He can, however, replenish his inventory by extending the A-10 rating granted for materials sold under this Order.

Application of Preference Rating Under Order P-22

An Operator or Supplier, in order to apply the preference rating to deliveries of Material to him, must endorse the following statement on the original and all copies of the purchase order or contract for such material, manually signed by a responsible official duly designated for such purpose by such Operator or Supplier:

"Material for Maintenance, Repair, or Operating Supplies—Rating A-10 under preference Rating Order P-22, as amended, with the terms of which I am familiar."

Such endorsement shall constitute a certification to the Office of Production Management that such Material is required for the purposes stated and that the application of the rating is authorized by this Order. Any such purchase order or contract for such Material shall be restricted to Material the delivery of which is rated in accordance therewith.

The Operator or Supplier placing any such purchase order or contract and the Supplier selling the Material covered thereby must each retain endorsed copies of such purchase orders or contracts, segregated from all other purchase orders or contracts, for a period of two years from the dates thereof for inspection by authorized representatives of the Office of Production Management.

The authority granted by Order P-22, by the endorsement of the certification given above, is operative between Supplier and Purchaser, and does not require transmittal of any forms to the Office of Petroleum Co-ordinator or the Office of Production Management.

It would be advisable for all Operators and Suppliers to obtain a copy of the amended Order P-22 and study it carefully.

If the A-10 rating granted by Order P-22 is not high enough to obtain the necessary scarce materials for Repairs, Maintenance and Operating Supplies, application for a higher rating should be made on the PD-1 form.

Project Priority Rating

Discussing the obtaining of a priority rating for an entire project, the PCO said:

"A priority rating may be obtained for a project such as a drilling program or the construction of a gasoline plant, cycling plant, repressuring plant, pipeline, etc. In order to obtain a project rating it will be necessary to submit, in quadruplicate, a complete prospectus. This prospectus should include detailed plans, and describe the purpose, use, materials involved, costs, and give the required delivery schedule."

Procedure in Emergency

When a "very definite emergency" arises, it is necessary for the operator to obtain a preference rating that will enable him "to buy, or borrow and replace, the necessary materials. This would apply to additional equipment or to materials for repairs and emergency inventory.

When such an emergency arises, telegraphic action may be obtained. The following information must first be wired by the operator himself:

(a) Date emergency arose, its exact location, and cause of emergency.
(b) Equipment needed and its operating importance.
(c) Supply of requested material which applicant has on hand or has available.
(d) Name and address of supplier from whom the needed material can be obtained.

The Office of Petroleum Co-ordinator will request the Office of Production Management to dispatch a rating by wire the same day or not later than the following day.

In all cases, the applicant must complete and file with the Office of Petroleum Co-ordinator a PD-1 form for the material requested by wire. This action is necessary to the completion of the record.

It must be remembered that preparations should be made in advance to avoid delays in operation, and emergency relief should be sought only in those cases where a very definite emergency has arisen *that could not have been foreseen.*

Bulk Plants and Stations Might Get Priority—IF

NPN News Bureau

WASHINGTON, Oct. 27.—Although priorities authorities are inclined to frown on the construction of new bulk plants and service stations, which make use of steel and other critical materials, they might grant priorities assistance for new bulk plants or stations definitely serving the needs of national defense.

Asked by NPN today if it were possible for a new bulk plant or service station to get a project priority rating if tied into national defense, a priorities official, who passes on such matters, replied:

"Yes, a project priority rating might be granted to a new bulk plant or service station provided it definitely served a national defense need—for example, if located near an Army camp or defense project. But it must tie into national defense."

A "project priority rating" means that the government will give priorities assistance to obtain all materials and equipment needed, whether such materials are on the critical list or not. (*See article on this page.—Ed.*)

Shell Plans New Terminal

Special to NPN

BIRMINGHAM, Oct. 25.—Plans for a Shell Oil Co. terminal at Powderly, near Birmingham, Ala., have been completed. The plant will cost more than $125,000, will employ about 125 local men during construction and is expected to be finished by Jan. 1 1942, officials announced.

The Birmingham area, extending 100 to 125 miles in each direction, will be served by the terminal when the Plantation pipeline from Baton Rouge is completed.

A. D. Webster of Oklahoma has been appointed superintendent of the Birmingham terminal. S. H. Gervin, field manager for Alabama, and W. J. Harrell, manager of the Birmingham area.

AN APPEAL . . .

For a Correct Valuing Of the Important and True Function Of Oil Marketing and Oil Marketing EQUIPMENT

THIS editorial is addressed to all in the oil industry and to those outside the industry who so largely control our destinies in this war defense.

Priority authorities at Washington have just granted wholesale oil marketing—terminals and bulk plants and trucks—an "A-10" rating for maintenance and repairs and necessary replacement.

This ruling does not seem to allow for the necessary expansion of oil marketing facilities to take care of the steady increase in consumption of petroleum products, a necessary increase due to War Defense. But the ruling ignores entirely the retail part of oil marketing, the stations and all the services at the retail stations.

These stations and retail outlets of all kinds should not be looked upon so much as a means of delivering just oil and gasoline to consumers but as being the absolutely necessary factors that keep the trucks and passenger cars of the country running on their necessary missions, necessary both to War Defense and to American living.

But, in addition to keeping this essential transportation system running, these retail outlets should be looked upon as conservers of this important form of transportation. By servicing these vehicles, these stations also conserve the steel and metal used in their manufacture and the labor, too, so that this material and labor can be used on other war defense facilities.

ASSIGNING to wholesale oil marketing an A-10 rating for supplies goes only part the way in providing this service to American transportation. All along their routes, trucks and cars must be protected and maintained.

But it is today questionable if an A-10 rating will do even half the job the priority authorities seem to have in mind. Complaint is common that many priority ratings mean little these days. The oil industry therefore cannot rest on this ruling. It will have to go further.

Backed up with facts as to just what the service of oil marketing is, the industry will have to demand whatever rating or preference orders or allocation is necessary to maintain the American oil marketing machinery in such shape that it can do its job of delivering an ever-increasing volume of petroleum products to the people of the United States, promptly and at the lowest possible cost.

This defense of oil distribution's machinery should be done by every one in the oil industry and by all manufacturers contributing equipment to that machinery. The matter is too vital to American life to be left solely to the Office of the Petroleum Co-Ordinator and his advisory committees or to OPM or SPAB or other government agencies. These latter are but tools with which to work.

Tell the Importance of Oil Marketing

Oil marketers and equipment men of the country see most clearly the problem. They have the greatest immediate and closest stake in that problem. Therefore, these marketers and manufacturers, through their respective associations and committees, should tell their own story about oil marketing—wholesale and retail, and about oil equipment's part in that necessary transportation of petroleum products from the well to the consumer. And they should tell it to whomever can help them. And they should tell it, keep telling it until the emergency ends so that oil marketing—those who use the equipment and those who make it—obtain the priorities assistance needed to help them render to the country's cause the 100% total effort that they are capable of.

GREATEST NEED of Oil Marketers and Oil Marketing Equipment Manufacturers today is:

A *true understanding* by all officers of the government and by oil men themselves everywhere, of the essential functions that OIL MARKETING EQUIPMENT performs in this war defense effort.

Oil Marketing Equipment has made petroleum products easily and cheaply available at all points,

when and where they are needed. The consumer—be he a worker in a war munitions plant or factory—finds his necessary petroleum product when he instantly needs it, finds it as simply as the factory manager or housewife obtains light by a click of the electric switch. With petroleum, a phone call or stop at the corner station is all that's needed to obtain immediate service.

The oil industry—thanks to oil marketing and the equipment manufacturer—is meeting new demands arising out of this war defense program so easily that all people take for granted this service of the industry.

THE very efficiency of the industry promotes ease of mind, invites complacency. Despite all the talk and great effort by government authorities to impress on the public their fears of an oil shortage in the East, the American public just would not believe it possible that the oil industry would fall down on its job, so great was its confidence in the skill and resourcefulness of this industry.

Chief evidence that the consuming public sees of the oil industry's skill and greatness is the tens of thousands of bulk plants and terminals, the tens of thousands of tank trucks on city street, highway and backwoods road, and the service stations and other retail outlets by the hundreds of thousands.

It is this marketing equipment, never out of reach and always ready to serve, that has inspired the public's confidence in a great industry—not the far-off well or even the immense refinery.

Oil wells and refineries are important, but millions of the industry's customers have never seen an oil well or refinery. It is these marketing facilities, the character of their equipment and their plentiful and convenient locations—plus the satisfaction from the use of our products—that made the public never lose its confidence in the industry's ability to overcome any oil shortage, even if there was one. In fact, the public just never would believe that an oil shortage was possible.

Marketing Equipment 'Sells' the Public

A creaking pumping jack bringing our vital liquid from the deepest of wells is necessary to the oil industry's operation. But the creaks and groans of that jack do not tell much of the oil industry's story to the consumer passing by on the highway.

It is the modern, up-to-date service station that tells the industry's story, with its smart looking and shiny equipment on pump island and in lubritorium, equipment that gives the customer gasoline in a few short minutes, equipment that, while he waits, safeguards and preserves his car or truck with oil and grease for many more thousands of miles of necessary travel. Also, the big, streamlined tank truck that never seems to stop or run empty in its service to small car and truck owner or to farm and factory.

Nor is it the tired and sweaty driller and tool dresser on a far-off wildcat drilling or the pumper climbing over fences on his rounds from well to well, who "sells" the public on the oil industry. Rather it is the alert, courteous station attendant, the clean looking, attentive truck driver, the salesmen and sales engineers who make petroleum products serve the consumer satisfactorily and pleasantly, that tells the public that oil is a great and efficient and always-serving industry.

SO LONG as there is no interruption to the steady flow of some 4,000,000 bbls. a day now of petroleum products to the millions of points where those products are needed, consumers—and many in the oil industry, too—will give little or no thought to all the machinery that makes this flow possible.

But let there be a break in that flow, let defense workers stay idle at home from lack of oil and gasoline to get them to the defense plants; let truckloads of war material be stranded in yards, warehouses and stock rooms; let the diesel-driven locomotives halt their trains of freight or hurrying passengers; let the oil-driven ships ride idly at anchor; let the very machinery in defense plants halt with hot, dry bearings—and America would at once become conscious of Oil's MARKETING MACHINERY.

Moves Oil from Well to Consumer

People would immediately realize that oil does not move in an uncontrolled stream by gravity, like a creek wandering through a pasture. The American public would begin to see that Oil is pushed, pumped, hauled and directed to its users through a long complex mechanism composed of tanks and pipe and valves and pumps and trucks—that at every step human beings must guide and guard it, must move it quickly and inexpensively and must protect it against loss by leakage, by evaporation, by fire and by deterioration.

ALL THIS is done, not just by oil men at the service station and at the well, but by the EQUIPMENT that has been designed and made for each particular job in this long flow of oil. The equipment at the customer's end of this flow is just as important physically as the bit and jars and pumping jack at the well end. But psychologically, as a factor in the industry's Public Relations, the modern and efficient equipment at the marketing end, which the consumer sees, does the job that builds confidence in this oil industry, that makes the public like and respect the oil industry, that makes the public, for illustration, refuse to believe there is or can be a shortage of the petroleum which is so vital in their lives today.

Therefore, it is necessary that the oil industry and all public officials properly evaluate the economic and war-defense importance of the industry's marketing equipment, to the end that this equipment be not only maintained in the best possible condition, but that new equipment be provided when and where needed. Also, that still more efficient marketing equipment be developed, manufactured and installed that not only

the product be better conserved but that the cost of getting it to the consumer be still further reduced.

LET US ALL SALUTE the Oil Marketing Equipment Manufacturer for the job that he is doing today.

To You, Mr. Oil Marketing Equipment Manufacturer:

Your job is to help keep this oil marketing equipment functioning smoothly and efficiently, to improve it for still better service to the American public and today to America's war needs.

Your job is to help keep today's equipment in the best possible shape, to make it handle more gallonage than ever before, that steel and other necessary war materials be conserved.

But your job also is to continue to develop better equipment that will permit of Oil's doing a still better service to the customer at still lower cost. And in that way you will still further conserve steel and other precious war metals.

Defense requires that the flow of petroleum be SPEEDED UP.

This you will do with better valves and fittings and meters and pumps and trucks and other mechanical devices.

Defense requires that today's automobile and truck and power engines be kept running longer and more efficiently.

This you will help do by providing that lubricating and other servicing equipment that will permit oil men to give all moving parts the careful attention and lubricants they must have.

Defense requires the utmost saving and conservation of all petroleum products.

This you will aid in by equipment that will be vapor as well as liquid proof. Parts of this equipment will be made to fit still more snugly so that not a drop will be wasted.

Defense requires the best of protection for oil whether in field tank or marketing tank.

This protection against sabotage, against fire and against theft you will give by still better equipment.

Defense requires new installations of bulk plants and service stations, where needed, as well as drilling more wells.

These demands for new marketing capacity you, the equipment manufacturer, should be allowed to meet with the most modern and efficient equipment you can make.

Defense requires the saving of every ounce of metal, every drop of petroleum and every penny of money.

This demand you, Mr. Equipment Manufacturer, should also be allowed to meet by supplying new equipment that will replace the obsolete and wasteful and costly equipment. Lack of a meter, lack of a pump, lack of a larger valve and pipe may not halt the flow of the petroleum product right at that point, but such lack will slow down the throughput of the plant, will delay the waiting tank truck and increase the overall labor time for each gallon handled.

In short, you, Mr. Equipment Manufacturer, should not be hamstrung and required to enforce on Oil Marketing the costly pronouncement: "Too little and too late."

BUT—how aware of all these facts are those of government? In fact, how aware of this picture of oil marketing equipment are oil men, even men active in oil marketing?

There has been a lot of loose talking about the "superfluity" of marketing outlets and marketing equipment. Some people, thinking of how much business certain competitors take from them or how much harder those competitors make them work, discount the oil distributing mechanism and pronounce much of it as "wasteful", "unnecessary" and "expensive."

New Defense Areas Need Facilities

Government hears these ill thought out criticisms and, up to date, has ignored the needs of retail oil marketing entirely for replacements repairs and the new equipment that increasing consumption will require. Government has heard these unjust comments and has given oil wholesaling but meager succor for replacements and repairs, in the face of creation of new factory and living communities which contribute to an ever growing consumption.

NATIONAL PETROLEUM NEWS for months—yes, years—has by facts and arguments urged the economic importance of the oil marketing division of the industry, its importance for our living today and for our war service.

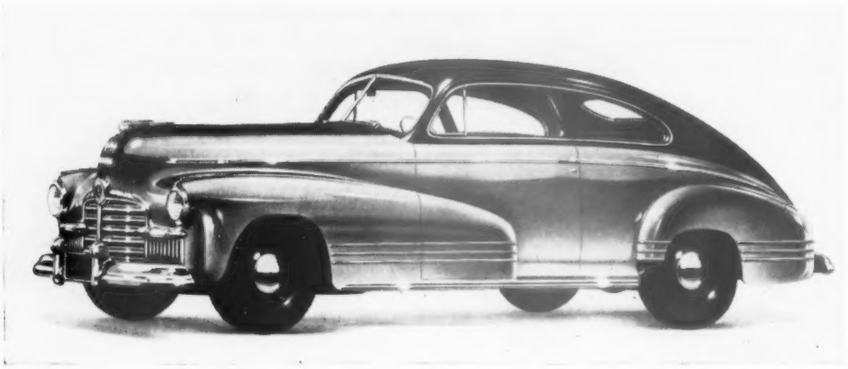
NATIONAL PETROLEUM NEWS has contended that the competitive clash of the tens of thousands of directing units in oil marketing has been of the greatest service in bringing products to the consumer at lower cost and in applying them to truck and car and tractor in the most skilled manner.

NATIONAL PETROLEUM NEWS now contends that the obligation on the oil industry for properly discharging its war and civilian responsibilities, lies just as heavily on the marketing division as on any other division of the oil industry; that for the proper discharge of this responsibility it is absolutely necessary for the marketing division to be given all the equipment and mechanical facilities necessary to maintain it in the most efficient condition possible; that wherever possible its efficiency should be still further increased with still more modern equipment; and that oil marketing must be given the additional equipment—and of the most efficient type—necessary to properly handle the continuing increases of billions of gallons of petroleum needed by the people and government of this country.

Servicing the 1942 Cars Fo

Oil Jobbers this year have an even greater responsibility to make certain that their own and their dealers' stations receive the proper lubricants, accessories, information and other aids necessary in servicing the 1942 automobiles efficiently and reliably, because the new car owners want them to last a long time.

To inform the Jobber quickly and accurately about the changes in the new cars over the 1941 models, NPN has prepared a series of articles, of which this is the third.



Pontiac Torpedo sedan-coupe, comes with either 6 or 8-cylinder engine. Wheel base is 119 in. on Torpedo models, 122 in. on Streamliners, same as for 1941 models; overall length on Torpedo increased 3 in. to 204.50 in., on Streamliners 2.75 in. to 210.25 in.

1942 PONTIAC

SUMMARY

- Engine unchanged from 1941; 6-cylinder is 90 h.p., 3200 r.p.m.; 8-cylinder, 103 h.p., 3500 r.p.m. Standard compression ratio remains 6.5 to 1, optional 7.5 to 1. Electro-plated iron alloy pistons, used for 16 years, are continued.
- Design of oil cleaner built into crankcase has been improved.
- List of recommended transmission and chassis lubricants is simplified.
- Oil change at 2000 to 3000 miles normal driving is continued as recommendation.

Capacities

Model	Torpedo Six	Torpedo Eight	Streamliner Six	Streamliner Eight
Radiator, qts.	18	19.5	18	19.5
Fuel tank, gal.	17	17	17	17
Crankcase				
Capacity, qts.	6	6	6	6
Refill, qts.	5	5	5	5
Transmission, pts.	1.75	1.75	1.75	1.75
Differential, pts.	3.25	3.25	3.25	3.25

(*No changes from* 1941)

Oil and Grease Recommendations

MOTOR OIL:

When lowest anticipated atmospheric temperature is:

Above 32° F.	20 or 20-W
Above 10° F.	20-W
Above —10° F.	10-W
Above —30° F.	10-W plus 10% kerosine

SAE 30 may be used, engine oil chart states, when it is expected that the average daytime temperature will be 90° F. or higher.

10-W oil plus 10% kerosine is recommended only for those territories where the temperature falls below —10° F. for protracted periods.

(*No changes from* 1941)

Change Periods:

Use 10-W oil in new car for first 1000 miles. Change at 2000 to 3000 miles under normal driving conditions, at 2000 miles under high speed driving. More frequent changes recommended in dusty driving and where driving is principally short runs in cold weather. When adding oil, to bring level from "add oil" to "full" on indicator gauge, takes 2 qts.

If oil cleaner inside crankcase is removed and drained for any reason, 6 qts. will be required for initial filling after assembly.

(*Same change periods recommended for* 1941 *models*)

GEAR LUBRICANTS:

Transmission:

SAE 80 extreme pressure gear lubricant, SAE 90 if former grade not available.

Same grade should be used for additions or refills where available.

"All purpose gear lubricants, for use in both transmission and rear axle, should be used only on the responsibility of the lubricant supplier", manual states.

Change:

For 1941 models, SAE 90 extreme pressure gear lubricant recommended, or regular gear lubricant (not EP) as

ars For Their Conservation

follows: above 60° F., SAE 140, below 60° F. SAE 90.

Change Period:

Once a year, or every 15,000 miles, preferably in the fall.

(*Same change period for* 1941 *models*)

Differential Lubricant:

SAE 90 passenger car duty hypoid lubricant, summer and winter. Ordinary or mild EP lubricants should not be used, is caution.

(*No change from* 1941)

Change Period:

Once a year, or every 15,000 miles, preferably in the fall.

(*Same change period for* 1941 *models*)

OIL FILTER

A precipitation type oil cleaner is built into the crankcase in all 1942 models, in place of the replaceable element type oil filter. Introduced in 1941, the present cleaner is improved and traps about 1 qt. of oil, while that on 1941 cars holds less than 1 pt.

The cleaner (see Fig. 1) consists of a settling chamber concentric with the oil inlet tube. When the oil reaches the top of the inlet tube, it flows down the outside of the inlet tube until it strikes a flat baffle and its direction is reversed.

At this point, dirt particles which are heavier than oil are thrown out of the oil stream into the settling chamber, where they gradually settle or precipitate until they rest on the bottom of the basin. The cleaner is said to take out microscopic particles of grit and metal as well as larger particles of foreign material. The settling chamber has ample capacity so it is not necessary to clean it.

A fine mesh screen is built into the cleaner, to give further protection under low temperature starting conditions.

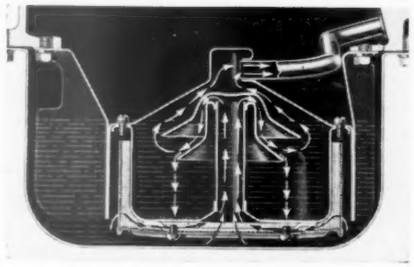


Fig. 1—Precipitation type oil cleaner built into crankcase is standard on all Pontiac models. It traps about 1 qt. of oil

Accessories to be Sold or Serviced

AIR CLEANER

Filter element type carburetor air cleaner is standard. Inspection every 1000 miles is recommended and cleaning at least every 5000 miles, by washing cleaning element in gasoline or kerosine.

Oil bath type air cleaner is recommended if driving is in dusty areas, and cleaning at least every 5000 miles. Refill oil reservoir with 1 pt. SAE 50 oil, SAE 30 when temperature is below freezing.

TIRE PRESSURES AND SIZES*:

Car Model	Minimum Pressure	Weekly Inflation Pressure Tires Cold	Tires Hot
Torpedo, 6 and 8			
(6.00 x 16)	28	30	33
(6.50 x 16)	24	26	29
Streamliner, 6 and 8			
(6.50 x 16)	28	30	33

*Both front and rear.

Manual recommends tire pressures be inspected once a week.

LIGHT BULB SIZES:

	Mazda Number
Headlight	Sealed beam
Parking	63
Tail and stop	1154
License	63
Instrument panel	55
Ignition key	55
Beam indicator	51
Dome (exc. convertible coupe)	82
Dome (conv. coupe)	55
Clock dial	55
Glove box	55
Directional signal	1154
Directional signal indicator	51
Safety light	1133
Fog lamp	1007
Luggage compartment	55
Vanity mirror	51
Radio dial—except 1942 master	51
Radio dial—1942 master	44
Heating panel—1942	51

General Servicing Data

HOW TO GET UNDER THE HOOD:

Controlled by knob below light switch on left. When knob is pulled out a hood safety catch must be released by hand before hood is raised.

TYPE SHOCK ABSORBER:

Delco direct double action; fluid capacity 6.75 ozs.

SPARK PLUGS:

Metric type, 14 mm. thread, specified gap .025 in.

FUSES:

The thermo breaker mounted on the lighting switch protects the head, parking, tail, dome and stop lamps, indirect panel lighting and clock circuits.

Tail lamps and indirect panel lighting circuits: Use 9 amp. S.F.E. fuse in line fuse holder clipped to back of panel above lighting switch.

Dome and stop lamp circuits: Use 9 amp. S.F.E. fuse attached to lighting switch.

Master Radio: Use 9 amp. S.F.E. fuse in "A" lead at receiver.

DeLuxe Radio: Use 14 amp. S.F.E. fuse in "A" lead at receiver.

Super DeLuxe Radio: Use 20 amp. S.F.E. fuse in "A" lead at receiver.

Dash heater: Use 9 amp. S.F.E. fuse in clips attached to underside of panel brace at steering column.

Underseat Heater: Use 9 amp. S.F.E. fuse in fuse clips attached to underside of panel brace at steering column.

Defroster: Use 9 amp. S.F.E. fuse in clips attached to underside of panel brace at steering column.

Directional Signal: Use 9 amp. S.F.E. fuse in line fuse holder in feed wire from ignition switch. Clipped to panel brace at steering column.

BATTERY:

6-8 volts, 100 ampere hours. Located under hood.

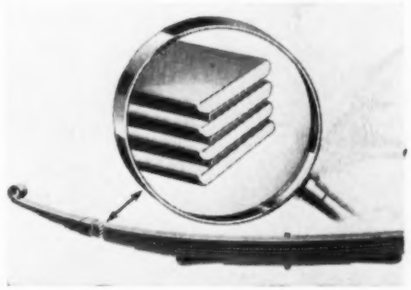


Fig. 2—Rear springs on 1942 Pontiacs have oil-soaked thin wood strips inserted between leaves to eliminate squeaks. Metal covers are retained, to keep lubricant in place and keep out dirt, slough and water

Jobber Keeps Salesmen Busy on Accessories W

In a previous article (Oct. 15, p. 27), NPN told how the Lehigh Valley Oil Co., of Allentown, Pa. is trying to make its advertising pay maximum returns.

This article tells how that same company kept its wholesale selling organization intact by proportioned selling of related sidelines, despite "moratorium" on soliciting new gasoline business, due to the East Coast "shortage".

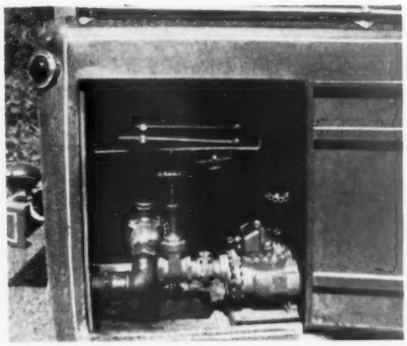
IN the year 1940 BC (before gasoline curtailment), the Lehigh Valley Oil Co. of Allentown, Pa., had 5 salesmen covering its territory—"Levocoland"—fighting the majors and other progressive independent oil companies in a never-ceasing battle for new accounts. These salesmen were, of course, also making the usual contacts with the company's several hundred dealers and prospects and selling the company's related lines.

During the East Coast "shortage", these salesmen could not solicit new gasoline customers because a sufficient supply of gasoline was not available.

But all of these salesmen remained on the company's payroll with the same salary and car allowance as in the past, because the management of that company had the foresight about a year ago to work out a plan for proportioned selling of related sidelines.

The plan was started after Sales Manager E. E. Oplinger of that company decided that it would be a good piece of promotion to prepare a sales and operating manual to place in the hands of dealers, containing, among other things, a list of the various products sold by the company.

This list when completed included 56 items exclusive of gasoline. No attempt was even made to include every item sold by the company, many of which were not stocked, but were available.



Everything in Lehigh's organization is geared for speedy, war time activity. This is one of company's metered trucks. At left: type of meter used in all of the company's trucks for speedy, accurate service

In the list were:

- Anti-freeeze (3 kinds)
- Auto glaze
- Auto polish
- Batteries
- Bulbs—auto and house
- Chains
- Cisco solvent
- Flashlights
- Flashlight batteries
- Fly spray
- Floor oil
- Fog lights
- Flushing oil
- Fuel oil
- Gasket shellac
- Glass cleaner
- Grease:
  - Chassis and cup
  - Extreme pressure
  - Graphite
  - Hypoid gear
  - Universal
- Hydraulic brake fluid
- Insecticide
- Kerosine
- Knee action oil
- Mirrors
- Motor oil (5 different types are listed, including the company's own brand)
- One shot oil
- Penetrating oil
- Polish
- Polishing cloth
- Radiator anti-rust
- Safety solvent
- Shock absorber fluid
- Soap
- Spark plugs
- Spigots for drums
- Spring spray oil
- Tape, friction
- Tire and tubes—supplier's brand
- Tires and tubes—retreads
- Tire coating, white rubber
- Tire patches, red cemented
- Tire repair kits
- Tire shop repair kits
- Transmission oils
- Upper lubricant
- Utility oil
- Valve cores and caps
- Wax
- Wiper blades, regular and winter type

To marketers there is nothing new about a list of related items like that. Many marketers carry several hundred items, including household equipment, bicycles and the like. But these were all strictly wholesale-resale items which the sales force was to sell to dealers.

After compilation of this list, it was further simplified by subdividing into 8 classifications. These were:

- Gasoline
- Oil
- Accessories, Specialties
- Grease
- Tires
- Batteries
- Alcohol
- Kerosine

Next, a list of all accounts in each salesman's territory was compiled. A check mark was made after each of these separate items being bought by each customer. The result made a rather bad looking picture in every salesman's territory. Out of the whole compilation, in none of the territories were dealers buying as many as 5 of the 8 listings. Yet all of these customers were buying similar materials somewhere.

Ordinarily this would not look like the best supervision. But in the case of Lehigh, they only began their policy of taking on related side lines in 1939, and had not really started in the related side line business but a short time before they started their plan for "proportioned selling".

Now every salesman of the Lehigh

ies While Waiting for Oil 'Shortage' to End

receives each month from the main office not only a list of all accounts in his territory showing which of the 8 classes of items were sold during the past month, but also a quota for the following month based on sales of ALL the related lines. The salesman's efficiency is determined on that basis alone. It is up to him to keep his sales balanced with these 8 items.

Quotas vary with the season, and of course special conditions of a territory. Right now the company is having trouble getting alcohol, and that doesn't play much part. Roughly, the quota is based on the retail related selling program that every time a dealer sells 1000 gals. of gasoline, he should sell:

20 gals. of motor oil
10 gals. of other petroleum products
10 lubrication jobs
$24 worth of tires and tubes
$6 worth of batteries
$16 worth of replacement accessories

The executives of Lehigh make no bones about saying that they realize the only way they can survive is by selling related sidelines. Their salesmen know that the only way they can survive as a part of the company is to do their job of selling all of the company's line to not only their present dealers, but that they must extend their operations to include other dealers as well. And they are doing a good job of it.

The salesmen are being backed with national advertising of the suppliers and local advertising and sales promotion, told about in a previous article on its operations.

Use of Dealer Manual

One of the special sales promotion helps given the company's wholesale representatives is the dealer manual.

This fills a need that other marketers have probably found to exist. It also saves considerable time for the wholesale men.

The manual is simply an 8½ x 11 in. binder, with an imitation leather cover. These are placed in the hands of all dealers, and either directly by mail from the company's main office, or through the wholesale representative, revisions of the sheets in the folder are issued from time to time.

In the manual are listed the retail prices of all products sold by the company at its own stations, the commercial motor oil and lubricant prices to fleet operators, the price set up on tires and tubes, batteries, anti-freeze, retread tires, spark plugs, tire chains and the complete line of Levoco-Cities Service accessories and specialties.

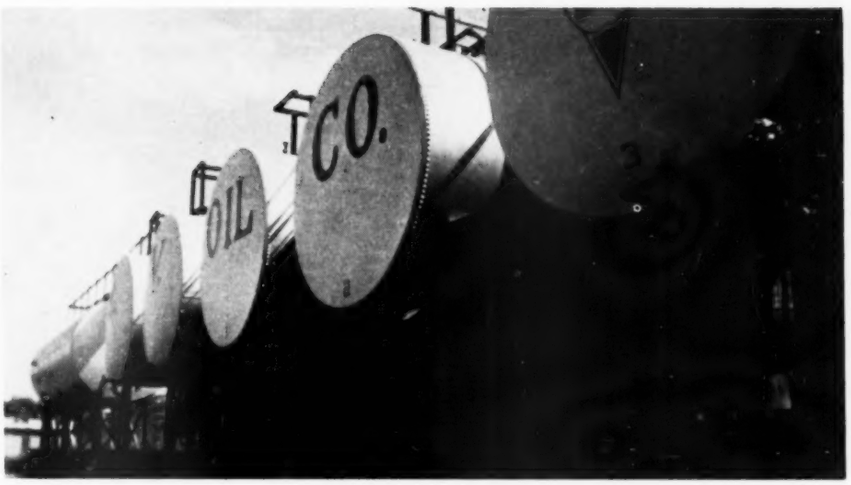
One sheet shows the low prices on advertising give-aways available to dealers, such as book ad matches, canned oil banks, art calendars, advertising oil lead pencils, radiator shields and the like.

Another sheet briefly explains the properties of the lubricants distributed by the company.

A section is devoted to complete instructions on the handling of charge cards, both the suppliers national card and the local card issued by the company to customers which the local company prefers carrying itself. Complete detailed information is given on how to make out charge sales tickets; what to do with them when they are finished and so on.

General information regarding the local company itself, such as bulk plant telephone numbers, items sold and so on, makes the manual one that is frequently referred to by the dealer, and keeps the company's name and products before him at all times. As new sheets are frequently issued, as well as the book being revised occasionally, there is not much chance of it being wasted. Most of the material is made on the mimeograph, the only printed material being that furnished by the supplier covering information on tires.

Another help given the salesmen is 4-page calling cards, listing various company products, telephone numbers and so on, in addition to some "plugs" on the company generally.



Lehigh's bulk plants are metered for efficient operation

One of many informative and helpful sheets from Lehigh's dealer manual

HOW TO HANDLE
LEVOCO & CITIES SERVICE CHARGE CARDS
IN YOUR STATION

Charge cards are issued for the convenience of the motoring public. Your customers, as well as motorists from distant points, may buy at your station and present either a Levoco Credit Card or a Cities Service National Charge Card. It is necessary that all Levoco-Cities Service dealers and employees understand how the tickets are to be prepared, so no business will be lost.

This is a sample National Charge Card. Always watch the expiration date. Do not honor cards which have expired. Cities Service cards expire on June 15th and December 15th of each year. Each National Charge Card should be signed by the customer when he receives his card. Then when he signs the charge ticket you can check the signature.

National CITIES SERVICE Charge Card
EXPIRES DEC. 15, 1940
John Q. Public
1234 Main St.
Anytown, Pa.
LEHIGH VALLEY OIL CO.
Distributors of
CITIES SERVICE OIL COMPANY

This is a sample Levoco Credit Card. It is not valid unless signed by the Credit Manager. The current year is printed in large red numerals. Levoco Credit Cards expire on December 31st of each year. The customer's signature on a charge can be verified by the signature on the card.

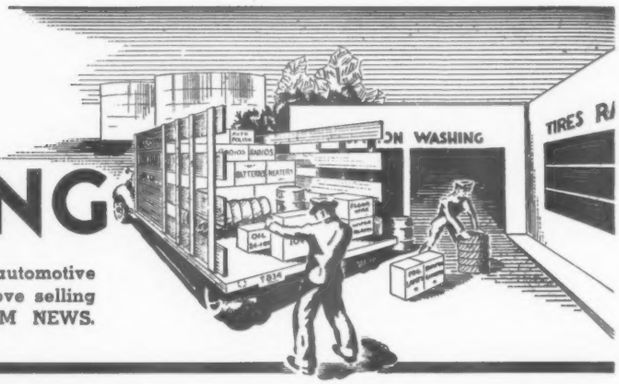
No. 7338
LEHIGH VALLEY OIL CO.
John Q. Public
1234 Main St.
Anytown, Pa.

When a card is cancelled, you will receive a post card carrying the code, "C C" which means "Credit Cancelled." A sample of a cancellation card is attached so you will be familiar with them. Always file cancellation cards after you have notified your employees to give no credit to

C C
File this notice for reference
Lehigh Valley Oil Co.-Credit Dept.

John Q. Public
1234 Main St.
Anytown, Pa.

MERCHANDISING



This is a readers' forum on merchandising of petroleum products, automotive accessories and allied lines. Let us have your ideas on how to improve selling at stations. Address: Merchandising Editor, NATIONAL PETROLEUM NEWS.

Don't Overlook Tubes

In 1940, according to the Rubber Manufacturers Assn., 35,724,034 tires were sold for replacement. This represents two-thirds of the annual tire market.

That same year, 29,134,432 inner tubes were sold.

That means that six and one-half million new tires went into service with old tubes in them.

All tires should have new tubes when they are put in service, as a tube is built to last only for the life of the tire. A tube traveling 20,000 miles has stretched as much as 25% from the heat and the flexing it has gone through during that many miles. When placed in a new tire, it wrinkles or folds, and the fold will chafe and often wear through, causing a flat.

In addition, accumulation of rust and sand between the tube and the rim causes high pressure leaks in the old tubes. This makes it difficult to maintain proper air pressure with the old tube. This in turn results in under inflation, which tire experts tell us sometimes cuts tire mileage in half. This false economy means that tires are being wasted.

This logical rubber conservation talk to purchasers of new tires should result in making the sale complete. It will also be a contribution to conservation by marketers and their salesmen.

* * *

Oil Law with Teeth

The state of Pennsylvania passed a law this year prohibiting the sale of reclaimed motor oil without it is clearly marked as such. The law became effective September 1, 1941.

The measure amends the penal laws of the state by the addition of new matter in such a way that even the "slickest" unethical advertiser of reclaimed oil would hardly take a chance on misrepresenting this product. For the penalties are stiff—providing fines up to $500 for the first offense, and up to $2000 for each subsequent conviction, with an imprisonment clause of not more than one year.

Blatant unethical advertising on any product, whether it is reclaimed oil, vinegar or mouse traps, simply results in creating a weak point in modern selling and distribution. Enemies of advertising in turn pick up that weak point and use it as an attack on advertising generally.

This law is worded so that it protects the ethical advertiser and eliminates those inclined to be unethical. Its scope is so broad that it forbids what "tends to deceive the purchaser". It gives those who would destroy, one less weapon to use against this vital force in modern marketing and distribution.

The measure (new matter given in italic type) follows:

"Section 865 Fraudulent Dealing in Liquid Fuels and Oils (a) Whoever stores, sells, exposes for sale or offers for sale, any liquid fuels, lubricating oils, *lubricants, mixtures of lubricants, adulterated oils, reclaimed oils, or falsely labeled oils,* or other similar products in any manner so as to deceive or tend to deceive the purchaser as to the nature, *origin,* quality (and) *grade or* identity of the product so sold or offered for sale, *or whoever stores, sells, exposes for sale, or offers for sale lubricating oil, lubricants, mixtures of lubricants, adulterated oil's, or falsely labeled oils, which has been once used for lubrication purposes and subsequently reclaimed, re-refined, or reconditioned, without clearly indicating or setting forth such a fact on the container pump or distributing device used,* shall be subject to the penalties provided in clause (f) of this section."

* * *

Attention Mr. Ickes!

The Arey Oil Co., American Oil distributors in Shelby, N. C., is co-operating in the voluntary program of saving gasoline and fuel but is "burning" hay.

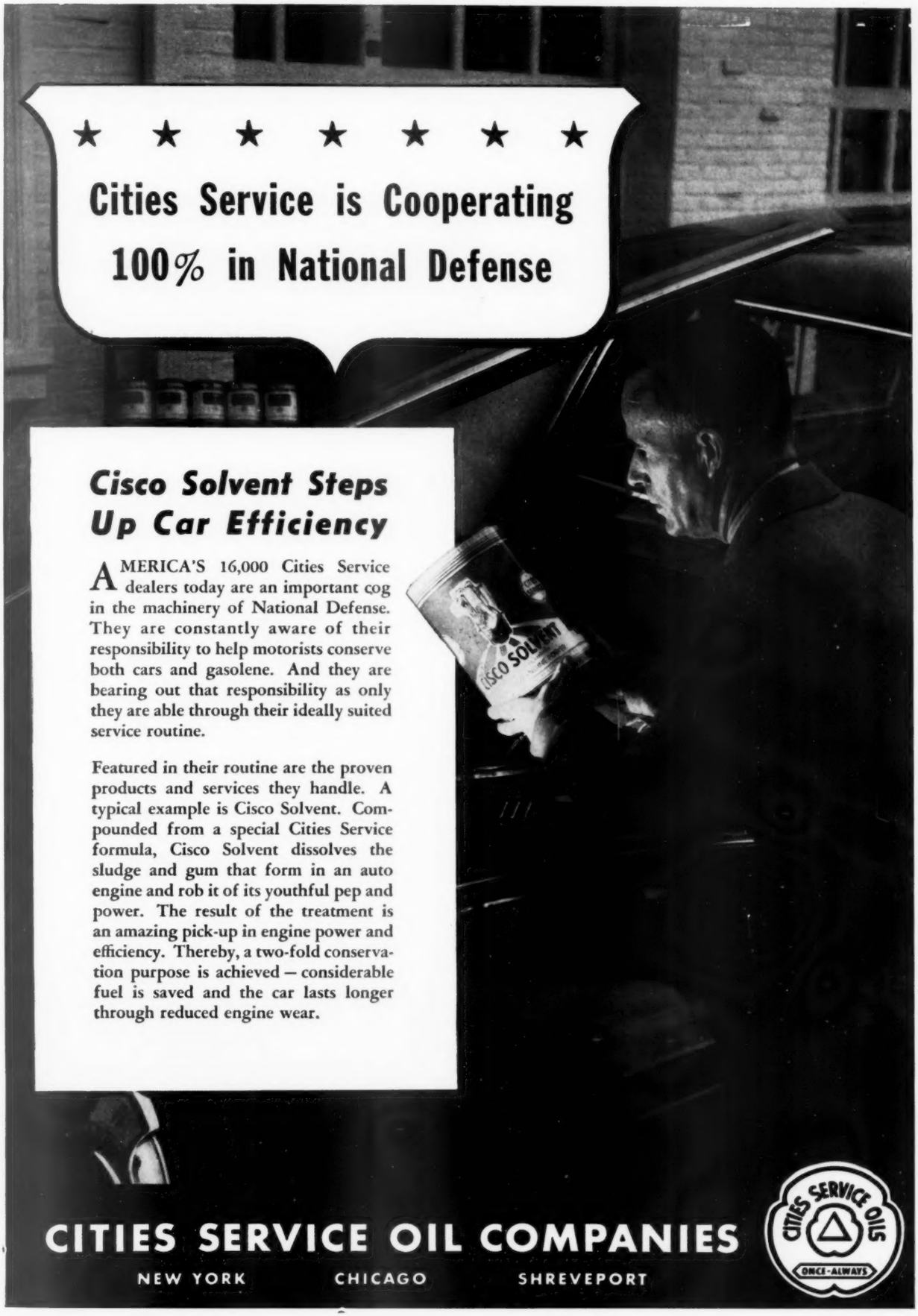
In a half page advertisement in the local paper, that company announces that it has purchased a horse and buggy as their part toward supporting national defense through fuel conservation.

To prove that they are not "kidding" a photograph of old dobbin and the buggy is included in the ad. The picture was taken in front of the company's bulk plant. The effect is rather startling by reason of a background of modern storage tanks, a streamlined delivery truck and a computing gasoline pump.

W. G. Arey of the Arey Oil Co., tells NPN that this is not just a publicity stunt; that they are really using the horse and buggy in their business for running errands. He also tells NPN that the rig is used in making collections. Although Mr. Arey made no mention of it, the chances are this will prove to be an extremely effective collection method, particularly when word gets around that the horse and buggy hitched in front of a home means that oil man Arey or one of his associates might be inside because the tenant got a little careless in "coming across".

Mr. Arey tells NPN that they are really using this outfit in order to do their part towards the saving of gasoline. And he adds that it is also doing a job of advertising the company's business.

Uses horse and buggy for running errands


★ ★ ★ ★ ★ ★ ★
Cities Service is Cooperating
100% in National Defense
Cisco Solvent Steps
Up Car Efficiency
AMERICA'S 16,000 Cities Service dealers today are an important cog in the machinery of National Defense. They are constantly aware of their responsibility to help motorists conserve both cars and gasolene. And they are bearing out that responsibility as only they are able through their ideally suited service routine.
Featured in their routine are the proven products and services they handle. A typical example is Cisco Solvent. Compounded from a special Cities Service formula, Cisco Solvent dissolves the sludge and gum that form in an auto engine and rob it of its youthful pep and power. The result of the treatment is an amazing pick-up in engine power and efficiency. Thereby, a two-fold conservation purpose is achieved — considerable fuel is saved and the car lasts longer through reduced engine wear.
CISCO SOLVENT
CITIES SERVICE OILS
ONCE-ALWAYS
CITIES SERVICE OIL COMPANIES
NEW YORK CHICAGO SHREVEPORT

Ohio Jobbers Tell Troubles To Congressional Committee

COLUMBUS, Ohio.—Problems of the oil jobber, as a local business, were presented by Ohio Petroleum Marketers Assn. to the Congressional committee studying the problems of small business enterprises at a hearing here Oct. 21.

Eric V. Weber, Cincinnati, of Eureka Oil Co., president of the O.P.M.A., and Robert A. Warfel, Columbus, secretary, attended the hearings. Mr. Warfel presented the Ohio jobbers' statement.

Burden of compiling countless reports for governmental agencies is one of principal worries of the oil jobbing company which, unlike the larger oil companies, does not have an accounting department, said O.P.M.A. statement. Another is the ever-growing severity of taxes.

Administrative "expanding" of new regulatory legislation so that new laws are being applied to small business which was never anticipated by the law-makers, was another point listed. Wage-hour law was cited as one of the worst in this regard.

While jobbers do not want to stand in the way of refiners obtaining prices for their products which will permit cost recovery, the O.P.M.A. said, the price-fixing agency guard against a narrowing of the jobber's margin as is happening at present.

Following is complete text of O. P. M. A. statement:

E. V. Weber

R. A. Warfel

THE Ohio Petroleum Marketers Assn., Inc., is genuinely grateful for this opportunity to submit an expression of its views upon existing problems of small business enterprises to an interested group of members of the federal Congress.

For your information, the voting membership of the Ohio Petroleum Marketers Assn. is composed of jobbers and distributors of refined petroleum products, of whom there are some 700 in this state.

Many causes have combined to make more difficult the successful operation of small business enterprises during recent years. There is constantly increasing competition in industrial, mercantile and commercial lines, which has rendered it possible for business houses to operate at a profit only by the exercise of the utmost economies and the persistent reduction of operating costs in every manner possible.

Expenses of operation have been increased very materially as the result of legislation, both national and state, imposing obligations and restrictions of varied character upon business enterprises. In addition, the repeated increases in taxes, in number, variety and amount, have resulted in constantly higher operating costs, both directly and indirectly,—directly, in the amount of money necessary to pay such taxes; and, indirectly, in the number and complexity of records which must be kept, and reports which must be prepared and filed.

For the most part, small enterprises do not have occasion to maintain accounting and auditing staffs for their current business operations. Recent legislation which now compels the keeping of detailed records of employment, the making of income tax returns, social security reports, occupational tax returns, workmen's compensation reports, and various other returns and reports required by both the federal and state governments and their various boards, commissions and agencies, imposes a much greater and more burdensome hardship upon small business enterprises than upon large organizations, which are able to maintain auditing and accounting departments at a much smaller expense per dollar volume of business.

The repressive influence exerted by the burden of maintaining such records and compiling and filing the numerous types of reports demanded by the various governmental agencies is considerably much greater in the case of small business concerns than in the case of large corporations.

The larger companies, with which small business must compete, generally are of sufficient size to permit the delegation of such auditing and accounting work to subordinates without consuming the time, impairing the efficiency, or distracting the energy of the directing officials of the company, who, thus, are able to devote their entire time and efforts to the duties of management, production, distribution, or marketing, as the case may be.

BUT, in the case of the small business houses, such as those of petroleum marketers, the individual proprietors or members of the partnership find their time consumed and their energies dissipated by the necessity of devoting a portion, and often a large portion, of their time and activities to such clerical and accounting duties.

This same observation, of course, is true with respect to small corporations, which, for the most part, are organized solely for the purpose of giving to the individual or to the small partnership the form of corporate entity. Moreover, men who are the proprietors of small business concerns, whether industrial, commercial, or mercantile, frequently have neither the aptitude nor the experience required to prepare and maintain such records and compile such reports; nor, as previously stated, do they have the time to do so, without seriously dissipating their energies and distracting their efforts from those activities upon which the success of their enterprises must depend.

Many of the taxes now levied upon business organizations, and which bear with undue severity upon small business houses, must be paid regardless of whether such enterprises show a net operating profit. Among such taxes should be included the capital stock tax, federal social security taxes, state occupational, and unemployment compensation taxes. Furthermore, under existing tax legislation, many small houses find it impossible to accumu-

MAXIMUM VOLUME HIGHEST SPEED...

Every Feature You Want in FUEL OIL NOZZLES will Be Found in these McDonald Models . . .

McDonald Ful-Flo Nozzles are made for oil company executives who insist that every detail of their delivery equipment uphold and enhance their reputation for fast, dependable delivery service.

They are members of America's most famous family of nozzles—well-proportioned, soundly built and designed to meet every requirement of fuel oil delivery.

In tune with the tempo of today, they offer the highest attainable volume of flow and the greatest possible degree of speed. In short, they are the kind of nozzles you would call for if you wrote your own specifications.

We recommend the Outlet Type of Check Valve rather than the Inlet Type. When Inlet Check Valves are used it is possible for pressure to build up between the valve proper and the Check Valve causing a pressure lock making it difficult to open the valve. This is not possible when an Outlet Check Valve is used.

Speedy and modern delivery equipment pays dividends in prestige and sales. Isn't it time to check on your hose nozzles? Folder on request.

A. Y. McDONALD MFG. CO.
"The Home of the Swing Joint"
DUBUQUE, IOWA

There's a McDonald Branch or Distributor Near You

Plate 891

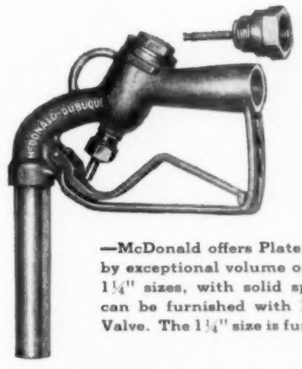
McDonald 1¼" FUEL OIL NOZZLE (Patented)

All Bronze except composition disc. Employs same patented operating principle for poppet as famous Plate 980 Service Station Nozzle. *Specially engineered to overcome chatter.* Compact, lightweight, full flow. Can be furnished with Plate 891-0 Outlet Check Valve as illustrated. Also available with flexible tube.

Plate 942

McDonald FUL-FLO Hose NOZZLE (Bronze)

Controlled delivery—full volume of flow. Compound lever type eliminates chatter. Heavily reinforced guard prevents breakage. Furnished with inlet or outlet check valve and with outlet strainer when desired. Sizes: 1¼" and 1½".



To Meet a DEFINITE DEMAND

—McDonald offers Plate 961—a popular nozzle featured by exceptional volume of flow. Now available in 1" and 1¼" sizes, with solid spout for flexible tube. 1" size can be furnished with Inlet or Outlet Type of Check Valve. The 1¼" size is furnished with Outlet Check only.

McDONALD

FUEL OIL DELIVERY NOZZLES

late sufficient surplus to retire existing obligations or to build up reserves necessary to most replacement requirements and unanticipated contingencies.

Regulatory legislation by the national Congress or state legislatures in some instances has been unduly expanded by administrative interpretation and regulation so as to impose burdens and restrictions upon local operations by small business enterprises which were neither anticipated nor intended by their sponsors or by the legislative authorities responsible for its enactment.

An illustration may be found in the existing federal wage and hour law, intended by Congress to apply to concerns manufacturing or producing products for shipment in interstate commerce. Yet this legislation, in effect restricting hours of employment, is being construed by local representatives of the department charged with its administration to apply to small business enterprises engaged in purely local operations, upon the theory that such operations in some manner are a part of the "flow of commerce" or because certain operations have not been specifically exempted by the statute.

MANY small enterprises engaged solely in the sale and distribution of products locally have been threatened with prosecution under the wage and hour law, or with suits by employes inspired by subordinates of the wage and hour division, unless they pay time and one-half compensation to their employes for hours of employment in excess of those stipulated in the law.

Many such local enterprises, though confident that they are not within the letter or intent of this legislation, have been forced to comply with the provisions thereof as to maximum hours of employment under duress exercised by the representatives of the wage and hour division of the Department of Labor, and because they cannot afford the expense of litigation which would be necessarily involved in defending suits, which might be brought either by the wage and hour division or by their own employes encouraged by such rulings, in order to establish the fact that such enterprises are not within the scope of this statute.

Compliance with this law, by reduction of hours of employment or payment of excessive wages for over-time work, threatens to impair the solvency and continued existence of many small enterprises in fields of endeavor where wages are and long have been in excess of the minimum stipulated by this law and hours of employment always have been reasonable.

The threat of the cost of extended and expensive litigation and the hazard of an adverse conclusion by which such employers would be forced to pay time and a half for all over-time plus an added penalty of an equal amount and, in addition, fees of opposing counsel have combined to force many such employers to reduce the hours of employment of their workers at the expense of operating at a continued loss and with the imminent hazard of insolvency.

The Ohio Petroleum Marketers Association recommends most strongly that legislation of this character recognize the financial limitations of small business enterprises.

The Ohio Petroleum Marketers Assn., by formal and unanimous action of its Board of Directors, specifically urges that Congress amend the wage and hour bill in these three particulars:

1. Clarify the business operations to which the provisions of the said law apply, so as to draw a distinct line between operations in interstate commerce subject to the act and those in intrastate commerce not subject thereto.

2. Provide a definite period of limitation not exceeding one year within which payment of wages for over-time employment may be recovered under the said act in order that the amount of such recovery may not become confiscatory and impair the financial existence of the employer.

3. Provide that no penalty judgment or attorneys fees may be recovered by an employe for back wages or for over-time employment where it is shown to the satisfaction of the court that the employer has acted in good faith and upon the advice of competent counsel in the conduct of his operations.

It is further recommended that Congress, by appropriate general legislation, undertake to simplify and reduce the number and character of reports which must be filed and records which must be kept by those engaged in small business operations, and that the present amount and number of taxes levied upon business enterprises, regardless of ability to pay, be curtailed and reduced.

It appears that in the near future the Congress may enact legislation of a price-control nature. If such legislation becomes necessary, may we not urge, gentlemen, that you insist that the determination of price structures be predicated upon facts and that the exercise of price policies shall be upon a fair and equitable basis for both small and large business enterprises.

FOR your information, in recent months there have been three substantial increases in this state in the refinery price of gasoline, which is the principal commodity handled by petroleum jobbers and dealers. These refinery price increases were attributed to the increased price of crude oil and advances in other manufacturing costs.

The Ohio Petroleum Marketers Assn. does not question the need of the refineries for increased prices to cover their advancing costs,—in fact, we believe that they were necessary. However, we do point out to you and your committee that the petroleum jobber and retailer have been and still are facing a rapidly mounting cost of operation at a time when their margins of profit are exceedingly narrow,—so narrow, in fact, that they are experiencing a very difficult struggle to remain in business.

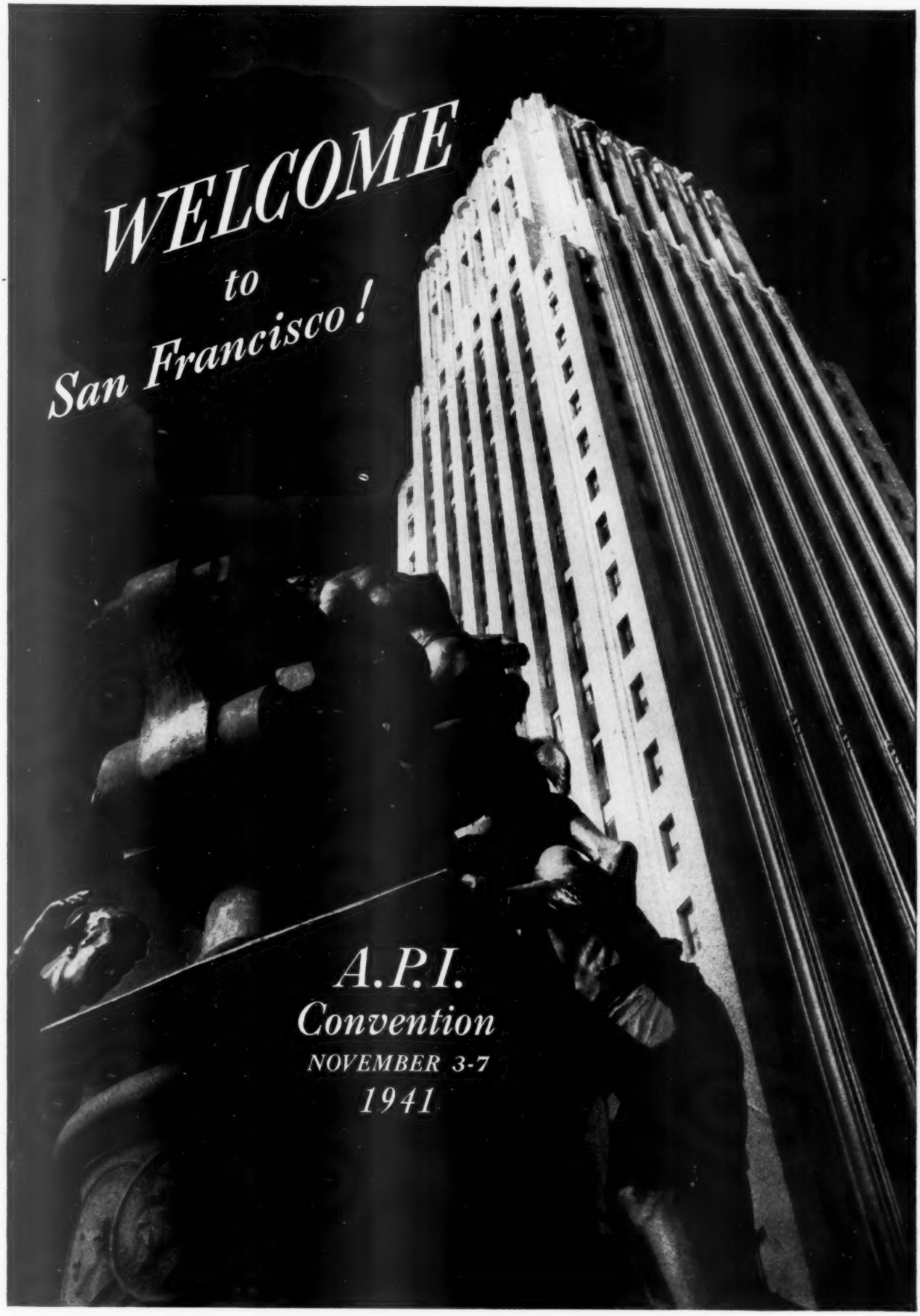
REPORTS reaching us indicate that many dealer stations in this state already have gone out of existence and that the threat of further heavy mortality of such small enterprises is most pronounced. Jobbers, also, are operating under very stringent handicaps. Their situation has been severely aggravated because of increasing costs of labor, merchandise, and equipment, with a tremendous increase in taxation also confronting them. This situation is critically intensified because of the fact that their low margin of profit is inadequate.

Jobbers and retailers generally believe that, in view of the increases in the refinery price of gasoline to meet advancing costs, there also should be a readjustment in the service station price sufficient to protect their own financial situation against the inroads of advancing costs. They have had no needed relief as yet and are struggling along with the same low margins. If we must come to price control by the government, then it should be inclusive of all affected interests in its scope.

SMALL business men were very much alarmed recently over a published statement attributed to a spokesman for the federal Office of Production Management, to this effect: "It is one of the profound ironies of our defense effort that its total effect may well be to obliterate the smaller enterprises from the American business scene."

Gentlemen, your presence here today indicates to us that you refuse to "swallow" such a philosophy of defeatism. This great nation of ours was builded by sturdy Americans who fought their way through with stout hearts and resolute determination. They were not swayed by sophistry. The small business enterprise ever has been a paramount factor in American business progress and stability and it has earned the right to continued existence.

Your interest and activities surely are most encouraging to small business. Thank you.


WELCOME
to
San Francisco!
A.P.I.
Convention
NOVEMBER 3-7
1941

Supply Keeps Up with Demand For Mid-Continent Fuel Oils

MORE intense industrial operations in the Mid-West as a result of national defense efforts have placed new summer and fall demands on Mid-Continent refiners for light burning oils.

But hand in hand with this increased industrial tempo that has supplemented domestic heating oil demands has developed a quickening of refinery operations. This has not only supplied the new demand but placed additional supplies in the tanks of many Mid-Continent refiners.

As a result, these refiners enter the fall heating oil season with a "comfortable" margin of light fuel oil stocks, sufficient, they say, to cover normal domestic burning oil requirements and the newer industrial demand.

Curves representing light fuel oil shipments from the Mid-Continent for past two years indicate deliveries during summer of 1941 have failed to drag the depths reached in previous two years. Increased deliveries have been made without any substantial widening of the Mid-Continent's normal marketing area, which is defined generally as the Mid-West.

Possibilities of approximately 18 to 20% reductions in light fuel oil rail rates this fall may push back the boundaries of this marketing area. For the most part though, Mid-Continent refiners have been averse to taking on new business outside the mid-western market.

Reasons for Larger Shipments

Several explanations of why the shipments curve this summer has failed to reach low levels of previous years are given:

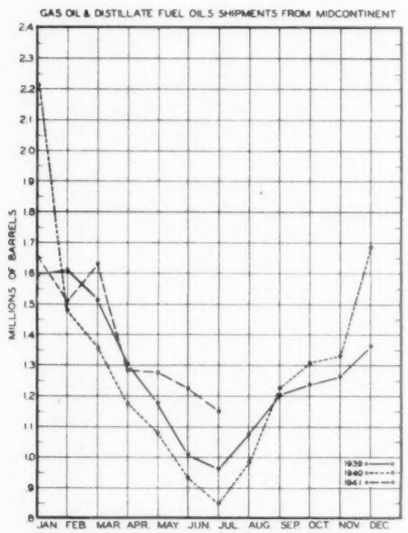
(1) Desires of some domestic heating oil distributors in the Mid-West to lay in their fall and winter stocks well ahead of the regular "buying season". The incentive to stock up early has been intensified this year by talk of a "possible" deficiency in heating oil stocks in the Atlantic coast area.

Shipments of light fuels by barge to the Twin Cities area, described by some as the supply cupboard of the Mid-West, have been heavy this year. Approximately 83,000 bbls. are said to have moved in one barge tow to Minneapolis recently. Reports from there indicate storage is "about full", and is expected to reach capacity by the end of the navigation season.

Rail shipments to distributors with small storage have held up well this summer. Many distributors have no appreciable storage and their purchases are expected to furnish the bulk of "early-season" buying.

(2) New activities at small industrial plants resulting from preparedness contracts. New demands have been created from this source for Mid-Continent heating oils which were never experienced in previous years. Small furnaces and other units capable of burning only lighter fuels are frequent equipment in many of these small plants. Volume of light fuel oil consumed has, therefore, been considerable.

(3) Normal increase in burner installations in the Mid-West. "A new installation and another tank

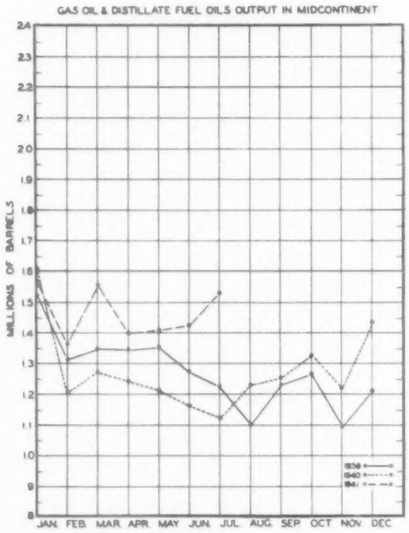

GAS OIL & DISTILLATE FUEL OILS SHIPMENTS FROM MIDCONTINENT
MILLIONS OF BARRELS
JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEP. OCT. NOV. DEC.
1939
1940
1941

GAS OIL & DISTILLATE FUEL OILS SHIPMENTS—TOTAL MID-CONTINENT*

(Figures in Barrels—000 omitted)

	1939	1940	1941
January	1,595	2,214	1,656
February	1,610	1,479	1,510
March	1,513	1,362	1,630
April	1,305	1,181	1,284
May	1,180	1,081	1,279
June	1,015	940	1,225
July	965	853	1,155
August	1,077	986	...
September	1,203	1,229	...
October	1,240	1,313	...
November	1,264	1,339	...
December	1,366	1,690	...

*Bureau of Mines figures.

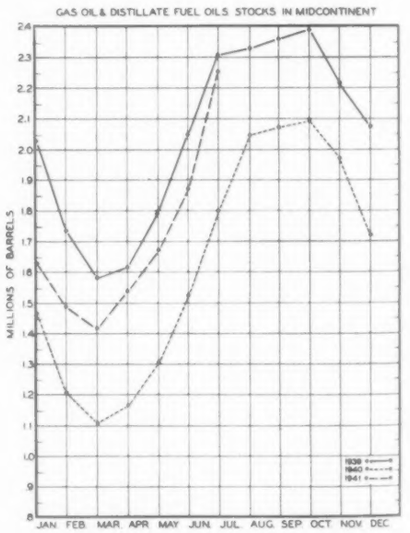

GAS OIL & DISTILLATE FUEL OILS OUTPUT IN MIDCONTINENT
MILLIONS OF BARRELS
JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEP. OCT. NOV. DEC.
1939
1940
1941

GAS OIL & DISTILLATE FUEL OIL OUTPUT TOTAL MID-CONTINENT*

(Figures in Barrels—000 omitted)

	1939	1940	1941
January	1,525	1,610	1,570
February	1,316	1,205	1,365
March	1,352	1,276	1,561
April	1,346	1,241	1,403
May	1,355	1,218	1,414
June	1,271	1,165	1,426
July	1,223	1,124	1,536
August	1,099	1,230	...
September	1,234	1,256	...
October	1,267	1,333	...
November	1,097	1,219	...
December	1,216	1,437	...

*Bureau of Mines figures.


GAS OIL & DISTILLATE FUEL OILS STOCKS IN MIDCONTINENT
MILLIONS OF BARRELS
JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEP. OCT. NOV. DEC.
1939
1940
1941

GAS OIL & DISTILLATE FUEL OILS STOCKS TOTAL MID-CONTINENT*

(Figures in Barrels—000 omitted)

	1939	1940	1941
January	2,036	1,470	1,635
February	1,742	1,196	1,490
March	1,581	1,110	1,421
April	1,622	1,170	1,540
May	1,797	1,307	1,675
June	2,053	1,532	1,876
July	2,311	1,803	2,257
August	2,333	2,047	...
September	2,364	2,074	...
October	2,391	2,094	...
November	2,224	1,974	...
December	2,074	1,721	...

*Bureau of Mines figures.

full of heating oil," seems to be the watchword now.

Utilize Refining Capacity

Output of gas oil and distillate fuel oils from Mid-Continent plants this year has shown a consistent trend above those of previous years.

Greater utilization of the Mid-Continent area's refining capacity in an effort to supply record gasoline demands has raised heating oil output so far this year. Bureau of mines' statistics show that instead of the downward trend in output experienced the past two years, production this summer has taken the opposite course. With an over-all increase in gasoline demand expected, refiners see little chance of light fuel output changing its upward course, attaining levels well above that of the previous two years.

With record gasoline demand both for domestic and lend-lease shipment abroad, manufacturers see the removal of an operating problem that has plagued them for years.

Each year, heating oil demand has shown substantial increases over the previous season. Each season brought the realization that stocks were insufficient and increased refinery runs were necessary to meet demand. But with increased output of heating oil came un-economic increases in gasoline output and stocks. Now, with heavier gasoline demand to absorb increased gasoline output, refiners believe the bogey of un-economic gasoline stock accumulations in the winter months will be removed.

Big question in the minds of mid-western heating oil distributors today concerns adequacy of supplies from regular refinery sources. Last reported stocks of gas oil and distillate fuel oils held by Mid-Continent refiners and reported by Bureau of Mines indicates a "substantial" surplus over 1940 inventories. During this summer, stocks have been lagging slightly below 1939 levels, but indications are that current stocks will exceed those of two years ago.

While current end-of-the-month stocks figures for August and September have not been released by the Bureau of Mines, industry estimates place Sept. 30 stocks at approximately 2,650,000 bbls., almost 590,000 bbls. above 1940 levels.

Believe Supplies Ample

So with "comfortable" supplies of light fuel oils on hand as a backlog and with refineries operating at near capacity, Mid-Continent refiners are confident they will have ample supplies to cover domestic heating oil and new industrial demand in that part of the mid-western area which they normally serve.

The extent to which Mid-Continent refiners may supply distributors outside their own marketing area, in case favorable rail rates permit, depends entirely on weather conditions in the Mid-West and the extent to which fuel oil production can be increased.

Corpus Christi eliminates The Corpus delicti*

**Corpus delicti*—the basic legal proof that a crime was committed; as in a murder, the actual body of the victim.*

Waste in shipping bulk liquids leaves its own "corpus delicti" in the form of inventory losses, contamination, excessive insurance, and other profit leaks. Southwestern shippers can eliminate these crimes against prosperity—by using General American's mammoth Corpus Christi Terminal. In service, in privacy, it's *your* plant, without investment on your part. Check the seven exclusive General American benefits. You'll appreciate why we've had to *treble* our Corpus Christi capacity since 1936!

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Chicago Burning Oil Association Promotes Educational Activities

THE practical nature of the activities of the Burning Oil Distributors Assn. of Chicago and the resulting benefits to companies marketing heating oil in that territory, are described in a report issued by Frank G. Spencer, head of Spencer Petroleum Co. and president of the association.

The association was organized on a voluntary basis in 1924 and incorporated as a non-profit organization in 1931. F. B. Caldwell has been secretary since 1934. Included in the activities mentioned in the president's report are the following:

1—Developed credit information on fuel oil users in the Chicago market and now has on file data on 55,000 users.

2—Energetic opposition to attempts to impose a tax on oil used for heating.

3—Sponsored co-operative advertising campaigns, in which oil companies and sometimes burner agencies joined, using newspapers, radio, billboards and booklets to tell public the advantages of oil heat. Part of the program this year was the preparation of newspaper advertising copy, to correct the impression that a shortage of heating oil for domestic consumers in the middle west was threatened because of the demands of the national defense program.

4—Inaugurated educational campaign among oil companies on sound delivery practices, which has led to greatly reducing Sunday and holiday deliveries and to the practice of basing prices to consumers on volume of deliveries, which made it advantageous to consumers to install larger capacity tanks and take deliveries in 400 to 800 gal., in place of buying in 150-gal. and 200-gal. lots.

5—Investigated fires and explosions alleged or inferred in newspaper reports to be due to faulty oil burner installation, or to poor heating oil, pointing out to the newspapers and to fire authorities where such statements were incorrect or unfair.

Frank G. Spencer

6—Investigated burglaries of cash carried at bulk plants and issued bulletins warning oil companies to guard against such attempts.

7—Every 10 days during the heating season, issues bulletin on Degree-Day data for Chicago, as a guide for oil companies in estimating consumers' requirements. Educated oil companies how to use the available weather forecasting services to estimate future needs.

8—Supplies calculators which indicate in printed form the total charge for any specified gallonage, price per gallon and the amount of tax. This to save time of truck drivers and also errors in their computation of amounts due.

9—Publishes safety bulletin and bulletins on truck operating practices for oil companies.

F. B. Caldwell

STANDARD OIL COMPANY
(Indiana)

Sends best wishes for a successful and enjoyable meeting to members of the

American Petroleum Institute
attending the convention in San Francisco

SAE Discusses Fuels and Lubes For Defense

TULSA, Oct. 27 — The curtains were parted for more than an hour the other night to provide technologists attending the Fuels and Lubricants Division of the Society of Automotive Engineers meeting here a peep behind the scenes in national defense.

Curtain puller was A. T. Colwell of Cleveland, president of S.A.E. and vice president of Thompson Products, Inc., who not only gave a word picture of what is happening behind the scenes but flashed on the screen pictures of latest engineering developments.

He told of 400 h.p. motors contemplated in the future, development of the first substratospheric bomber utilizing over 2000 h.p. and with cruising fuel economy comparable to diesel and superior to the fuel injection type engines of the Germans.

These behind the scenes developments are all aimed to "give our forces equipment of finest quality and greatest quantity" the S.A.E. president said.

While his paper dealt mostly with the automotive side of engineering, one section dealt with "fuels and oil," in which he stated that the "foresight and research of a number of agencies in America have given us undisputed first place in both quantity and quality of fuel and oil."

Mr. Colwell made the following observations:

100 octane fuel means 20 to 25% more power than 90 octane fuel—this is one reason for British defense superiority today.

Advantages of 100 octane fuel include smaller fuel load, lighter engines per horse power, lower cooling load, which in turn means higher speed, greater load carrying ability and greater cruising radius.

The high compression engine matches the diesel engine in fuel economy.

Standardization of fuel and oil for the ground and air forces is important.

Much study has been given to fuel oil for the Navy. For Pacific operation, underground reserves are adequate, but present stocks would not meet Atlantic operations as well.

We are able to develop motors of higher and higher power because fuel has kept pace.

One gallon of gasoline has sufficient energy to drive an ordinary car 200 miles if this power could all be used.

Using more of this energy would be of great importance in war equipment.

New N.A.C.A. laboratory at Cleveland will delve into problems of how to obtain more power for less weight, fuel economy, supercharging and cooling.

Mobile equipment, with our system of highways, will be a better defense than several Maginot lines.

Our great fuel distribution facilities are unequaled in the world and can keep equipment moving in time of war.

From the present program two great industries will evolve—aircraft and plastics.

Internal combustion engines will be more efficient—higher speed and higher compression. Manifolding and carburetion will be greatly improved, the use of superchargers will increase, and there will be changes in bearing designs.

Freight will be handled by diesel power.

Discuss Diesel Fuels

The technical program of S.A.E. was given over to papers dealing with fuels and lubricants, with most emphasis given the diesel side of the motive group.

To the refiner faced with problems beyond his control which limit his ability to meet, economically, the wide variety of diesel fuel specifications, one group of speakers suggested standardization on the Diesel Fuel 2-D specifi-

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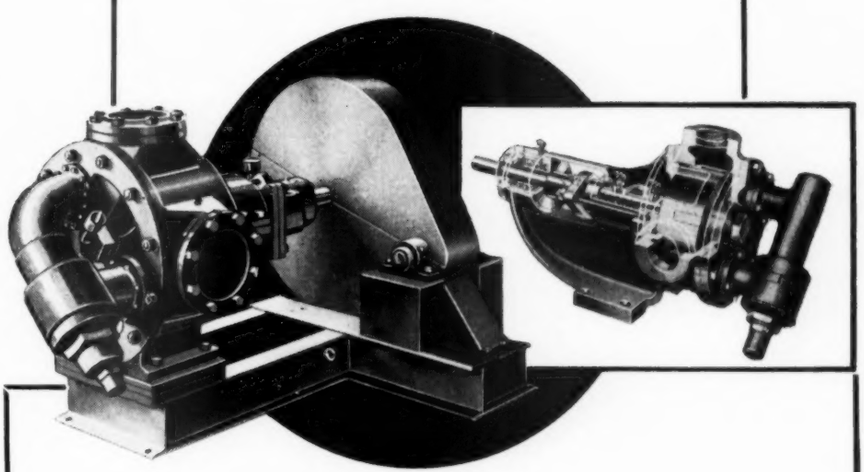

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cations of the American Society of Testing Materials.

Diesel fuel meeting such specifications would be a universal fuel suitable for mobile and high speed equipment, W. G. Ainsley, H. D. Young and M. L. Hamilton of Sinclair Refining Co., suggested in their paper "A Cetane Number Study of Diesel Fuels." Such a fuel would give satisfactory engine performance and with some tolerance allowed in cetane number and viscosity specifications for low temperature operations, refiners should be able to make such a fuel universally available, they said.

Use of ignition promoters offers interesting future possibilities for economic utilization of a wider range of fuel stocks as well as for meeting special diesel fuel specifications, it was said. Increased use of diesels in national defense program may furnish the stimulus for wider use of such promotors, the group was told.

Results of Diesel 'Lube' Tests

It was with the thought in mind that "while the function of additives cannot be overlooked in connection with this problem of engine deposits, the properties of the mineral oils are equally important," that Socony-Vacuum Oil Co. engineers presented their paper on "Diesel Lubricating Problems."

Results of laboratory tests on three general lube grades and distillate versus residuum oils, led authors to conclude that it might be possible to blend paraffinic and naphthenic oils in such manner that the best features of each could be retained. This was done and tests indicated "results obtained from these blends were in general superior to those obtained with the individual distillates."

Other tests led to conclusions that belief that paraffinic oils are superior in regards to load carrying capacity to naphthenic oils generally was correct. But beliefs that load carrying capacity of a lube could be improved by increasing its paraffinicity and that presence of some residual oil in a lube would improve lubrication where high cylinder temperatures were encountered, by preventing "drying up," were considered "not necessarily true." Authors of this paper were A. E. Smith and J. P. Stewart of Socony-Vacuum.

Results of extensive road and laboratory tests on 5 representative lubes led to following conclusions by 4 Continental Oil Co. technologists in their papers on "Changes Occurring in Oils and Engines From Use":

There is considerable room for debate as to optimum degree of "peptizing or detergency" desired in an oil; the minimum change in oil characteristics in service is most imperative along with enough peptizing to prevent excessive deposition of materials of either intrinsic or extrinsic origin; desirability of preventing formation of products of oil change rather than permitting their formation and causing them to be dissolved in the oil, since such oil soluble products result in accelerated rates of oil change. It was also indicated since road test units displayed higher rates of oil change, even though operated at lower temperature, that catalytic effect of oil deterioration residues left in engines at time of oil change is of greater magnitude than generally recognized.

Rate Engines for 'Dirtiness'

In his discussion of the "Value of Engine Rating System in Correlating Oil Stability Engine Tests", H. L. Hemmingway of Kendall Refining Co. described how the engine ratings system provides a "third dimension" to usual test engine photographs by providing a numerical determination on the "dirtiness" of an engine. Such engine ratings are indispensable in a proper study of oil stability improvement and the effect of additional detergency is readily evaluated by use of the system, it was said.

Heat transfer apparatus devoted to maintaining efficient jacket water and lube oil temperature for internal combustion engines was described by Howard F. Brinen of Young Radiator Co. in his paper on "Current Solutions of Cooling Problems in Various Uses of Oil, Jacket Water and Special Heat Transfer Applications."

His paper provided a visual approach, through pictures, to solution of problems brought about by increased cooling loads. Changes in cooling equipment follow two general trends, he said—(1) greater cooling in less space, and (2) greater operating efficiency with lower cost without limiting external dimensions.

Discusses Oil Filters

Dr. Ulric B. Bray, consulting engineer, in speaking on oil filters concluded that a suitable filter can improve results obtained with the best compounded oils, but that no filter in use today can be substituted without sacrifice for the proven compounds used in modern diesel engine lubricants.

Speaking on filters versus crankcase oil drains, the consultant stated use of an efficient filter "should not be taken as justification for extending the oil drain period beyond reason."

"Where straight mineral oils fail to give the performance required and compounds are necessary, exhaustion of the compound determines the maximum drain period," he said, adding that "with either straight mineral oils or compounded oils, the dictates of common sense should not be disobeyed regardless of the appearance of the oil."

He cited ample justification for an efficient filter on every engine, "without reference to extension of oil drain period," concluding that "if there isn't, promises of extended drain periods won't make it."

During discussion of a paper on "Some Recent Work with the Sligh Equilibrium Air Distillation Appara-

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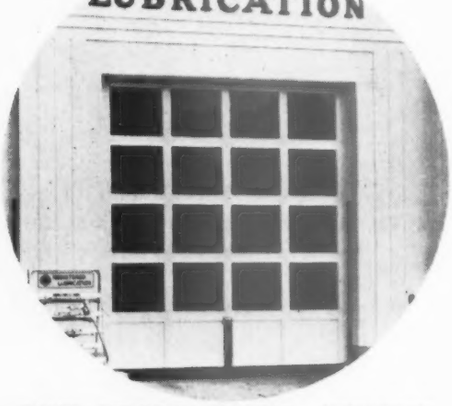

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tus," by R. C. Alden and H. M. Trimble of Phillips Petroleum Co., the subject of volatility in future motor fuels was brought up from the floor. While Mr. Alden refused to "take a look into the future," he did refer to a definite relationship between volume of motor fuel produced and volatility. If we must obtain more gasoline from less crude, gasoline must be expected to be less volatile, he said.

Urges Octane 'Top'

Dr. Bray, in the discussion, advocated an "octane top" if the industry is to stay in business, contending that the public hasn't been paying for increased octane ratings and higher volatility.

The consultant advocated standardization of motor fuel specifications, especially during the emergency.

In the student debate on question of "Resolved: Passenger Car Crankcase Draining Every Thousand Miles is to be Preferred Over Draining at Greater Distances," the negative side won. Students from the division of engineering, Oklahoma Agricultural College debated the negative, while students from the University of Oklahoma's College of Engineering argued the affirmative.

John A. C. Warner, S.A.E.'s general manager, discussed "What S. A. E. Means to You," at the Oct. 23 dinner meeting.

Ten New Appointments Announced by PCO

NPN News Bureau

WASHINGTON, Oct. 28—Petroleum Co-ordinator's Office today announced following appointments to Washington and field staffs:

Washington Office: Willis Crane, transportation analyst (formerly transportation lawyer, Department of Agriculture); George Gibson, refining materials engineer (formerly with Hancock Oil Co., Long Beach, Calif.); James H. Hall, assistant to the director of conservation (formerly with the Texas Co. of Mexico); Herbert J. Hofmann, Assistant Petroleum Analyst (associated formerly with Standard Oil Company of New Jersey at Aruba); Robert W. Olinger, economic analyst (formerly engaged in mining and oil endeavors in Mexico and Brazil); Clyde Thomas, senior attorney (formerly assistant U. S. attorney for Southern District of California, Los Angeles); Joseph Winterberger, chief supply technician (formerly associated with W. M. McEldowney, Pittsburgh, as auditor-inspector); Justin R. Wolf, senior attorney (formerly attorney, Federal Power Commission, Washington, D. C.).

District Three—Houston, Tex.: John B. Murrell, conservation engineer (formerly division production engineer, Shell Oil Co., Inc., Houston, Tex.)

District Five—Los Angeles, Calif.: Everett G. Trostel, conservation engineer (formerly petroleum engineer, Union Oil Co. of Calif., Los Angeles.)

PCO Asks Aviation 'Gas' Committees To Prepare Statistics on Capacity

NPN News Bureau

WASHINGTON, Oct. 28.—New jobs were handed to the industry's aviation gasoline sub-commiteees today by Petroleum Co-ordinator Ickes as part of the "all-out" effort to overcome a prospective deficiency in 100-octane gasoline refining capacity.

PCO's Refining Director Wright W. Garry wrote subcommittee chairmen in the five districts, requesting "immediate action" on a number of problems. He asked them to:

"1. Prepare and submit a tabulation setting forth the quantity and quality of base stocks now used in the manufacture of 100-octane number and other grades of aviation gasoline.

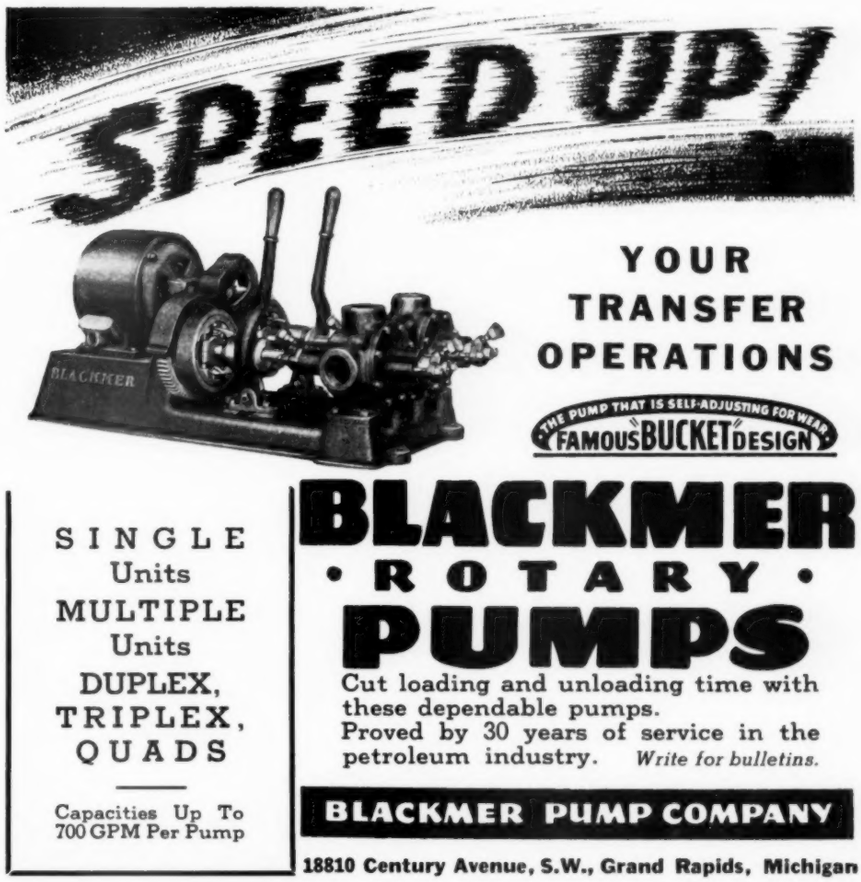
"2. Make a survey of potential production of base stocks of high octane number which are not now used in aviation gasoline but for which facilities exist to manufacture these base stocks to specifications. The survey should include a statement of future commitments which have been made for these stocks, and advise companies that are using low octane base stocks where high octane number base stocks can be obtained.

"3. Present to the Director of Refining a tabulation of the outside isobutane requirement for all proposed plants set forth in recent committee reports, and then contact individual companies for information with regard to commitments for this isobutane so as to eliminate duplication of raw materials source.

"4. Survey and file a tabulation showing present isopentane segregation, where this material is not used, and the present and future commitments for and availability of this material.

"5. Investigate all existing hydrogenation capacity available and report on present use of this capacity, the potential capacity if it all could be used for codimer hydrogenation, and the actual availability of hydrogenation capacity not now in use. Particular attention should be given to the defense importance of present hydrogenation operations.

"6. Investigate and report on a suggestion that high octane base stocks can be obtained for District 2 (Mid-Continent) by barge shipments out of District 3 (Gulf Coast), and that excess high octane base stocks available in District 1 (Atlantic seaboard) can be utilized by shipment of blending agent from the Gulf Coast."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MARKETS

Mid-Continent

TULSA, Oct. 25.—Quotations for all products were unchanged in the Mid-Continent the past week. While opinion was still divided on "freer offerings" of gasoline, most refiners said small offerings "can be found" but that there was no surplus and supplies were closely held. Light fuel demand was good, with contract takings "seasonal." Lube shipments continued heavy with "exceptionally heavy" call for branded oils. Two cars of 131-133 A.m.p. white crude scale wax sold at 6.375c for shipment to Canada.

Gasoline takings against contracts for northern shipment were heavy for the season, some refiners reporting volume as much as 25% above last year. Local demand in southwestern districts was down on account of rains as much as 25% in Texas and 30% in Kansas, with movement hampered by flooded highways in some areas.

Oklahoma refiner sold 50 cars 72-74 oct. gasoline for resale, immediate shipment, at rate of 10 cars daily, price based on "market-date-of-shipment." Arkansas refiner sold 1 car 72-74 oct. at an undisclosed price to a North Carolina supplier. North Texas refiner sold 1 car 72-74 oct. at 6.3c; quotations by others ranged 6-6.625c.

Gulf

NEW YORK, Oct. 25.—Two sales of gasoline at 6.75c were reported at the Gulf during the past week, and refiners said they were receiving a "steady flow of requests" for all grades. "We're having the greatest demand for gasoline in the history of the Gulf Coast," said one who had received 10 inquiries in 2 days. "We've given up trying to keep track of inquiries," he added.

Sales reported at 6.75c were of 100,000 bbls. of 81.5 oct. (research) for first-half-of-December lifting and a cargo of 81-81.5 oct. for November lifting, coastwise. Quotations for min. 80 oct. (research) ranged from 6.5 to 6.75c.

Cargo of 80,000 bbls. 76 oct. (ASTM) 400 e.p. leaded was reported sold at 6.625c for last-half-of-November lifting, coastwise.

Cargo of 80,000 bbls. of 48 d.i. gas oil was reported sold at 4.25c for export to an undisclosed destination. One refiner advanced his quotations for all grades 0.125c, but lows of price ranges were unchanged.

Sale of 90,000-bbl. cargo of 6 gravity Bunker "C" fuel for early November lifting, coastwise, was reported at $0.875. Quotations for cargo lots ranged from $0.85 to $0.96 per bbl.

Inquiry for 4500 bbls. marine diesel oil was reported, with this grade priced 10c higher at $1.65 to $1.80 per bbl.

Inquiries for 80-100,000-bbl. cargoes of both No. 2 fuel and kerosine were reported by many refiners. Quotations for the two products ranged from 3.75 to 4.25c, and 3.875 to 4.5c, respectively.

Atlantic Coast

NEW YORK, Oct. 25. — Immediate lifting of restrictions on gasoline sales in the East Coast area, recommended by Petroleum Co-ordinator Ickes to OPM late in the week ended Oct. 25, met with approval of suppliers throughout the district, but their response to announcement of the recommendation was mixed. Some "assumed" the "L-8" curtailment order was no longer in effect and directed that "normal delivery operations" be resumed at once. Others said they would take no action until the official order was forthcoming from OPM Chief Nelson.

Gasoline markets prior to lifting of restrictions were reported "very quiet," although demand continued good and supplies tight. Suppliers generally were limiting sales to their regular customers who were said to be taking their full allotments against contracts.

Marine diesel oil was priced higher at New Orleans when suppliers at that point advanced their quotations 10c to $1.65 per bbl. Quotations at other seaboard points were unchanged.

Heavy demand from industrial accounts for heavy fuels continued unabated with supplies "extremely tight." Southern supplier said he was getting "quite a few" calls for No. 2 fuel, but northern suppliers reported continued light demand for heating oils.

California

LOS ANGELES, Oct. 25.—From 5 to 10c per bbl. advances were reported the past week for all grades of fuel oil at independent plants in the Los Angeles Basin, with heavy oils ranging from $0.70 to $0.80 and light oils from $0.80 to $0.85. Increased demands by defense industries were said to have resulted in a shortage of fuel oil.

Rack prices of third grade gasoline at some independent refineries in the Basin area ranged from 4.5 to 4.75c. At a majority of independent plants, however, third grade ranged from 5 to 5.25c.

Declines of 0.125 to 0.25c in cargo quotations for gasoline were reported by West Coast suppliers. U. S. Motor, 60 octane minimum, ranged from 5.25 to 5.5c; 400 e.p. blend, 65 octane minimum, 5.75 to 6c; 390 e.p. blend, 68 octane, 6 to 6.25c; and 375 e.p. blend, 70 octane, 6.25 to 6.375c.

Mid-Western

CHICAGO, Oct. 25.—Gasoline offerings were reported "more numerous" the past week by refiners and tank car marketers in Chicago. Shipments continued heavy against contracts. "We are shipping as much material as we can possibly make before the Great Lakes navigation season closes," one refiner said.

Open spot sales reported by 4 tank car marketers during the week were: 14 cars 80-82 oct. Ethyl at 6.5c; 17 cars 72-74 oct. at 5.875c; and 8 cars 60 oct. & below at 5.25c, FOB Group 3.

One refiner quoted 7.4c for 80-82 oct., and refiners quotations ranged 6 to 6.375c for 72-74 oct., 5.2 to 5.625c for 60 oct. & below, FOB Group 3.

Marketers Group 3 quotations ranged 6.25 to 6.75c, 5.875 to 6.125c, and 5.125 to 5.25c, for the 3 products, respectively.

Marketers also sold 7 cars 72-74 oct., 3 cars at 7.375c, and 4 cars at 7.5c; and 2 cars No. 2 straw fuel at 5.5c, FOB Chicago district refineries; 1 car No. 2 straw at 5.4c; 5 cars No. 5 fuel, 2 cars at 4.25c, and 3 cars at 4.3c; and 11 cars No. 6 fuel at 4.1c, delivered Chicago; and 1 car 68-70 oct. gasoline at 7c, FOB Michigan refinery.

Pennsylvania

CLEVELAND, Oct. 25.—Good demand for most refined products was reported by western Penna. refiners in the week ended Oct. 25. Fuel oil, 36-40 gravity, was offered 0.125c lower from the lower field. Quotations for other products for the most part were unchanged.

Sale of "substantial quantity" of 36-40 fuel was reported from lower field at 5.75c a gal. and toward the end of the week there were reports that this price was being shaded. Quotations ranged from 5.75 to 6.25c. Competition from Illinois and Michigan fuels was "keen".

Demand for kerosine particularly was brisk. Sales of 45 w.w. were reported from lower field at 6.25c and 6.5c, with quotations ranging from 6.25 to 6.5c. Some refiners said they were short; one said he was 10 days behind on shipments.

Bright stock was offered more freely than for some time past. Inter-refinery sales were reported at 26c and 26.5c; direct-to-jobber sales at 27c; quotations for 25 p.t. stock ranged from 25 to 27c.

Reports of gasoline price shading in the lower field were unconfirmed. Quotations were unchanged, ranging upward from 7.25c.

REFINERY and SEABOARD PRICES

In bulk lots by Motor Transport, Tank Car, Barge or Tanker as shown

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

HOW PRICES ARE REPORTED—

Refinery and Seaboard prices in National Petroleum News are gathered by PLATT'S OILGRAM and are as published in the Monday issue of the OILGRAM.

PLATT'S OILGRAM is a reporting service issued in three identical editions daily from News Bureaus at New York, Cleveland, and Tulsa, Okla. PLATT'S OILGRAM gathers and publishes what its publisher and representatives believe to be accurate news of sales, prices and current happenings affecting the oil industry and that will be of interest to its subscribers. As this information is usually private, OILGRAM reports it according to what it is able to obtain from sources deemed reliable.

All information is supplied without guarantee as to its completeness, accuracy time of transmission or promptness of delivery.

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Prices shown in the tables are quotations (meaning sellers' general offers or posted prices), or actual sales prices, reported to OILGRAM by refiners for "open spot" transactions, except as otherwise specified.

Prices arrived at by discounts off a specified price or "market date of shipment," prices named in contracts or prices arrived at in accordance with any arrangement made prior to date of sale, are not for "open spot" transactions and therefore are not considered in making the price tables. Prices made to brokers and prices in "Inter-refinery" transactions are also not considered except as may be noted.

All prices are for "immediate" shipment except in Gulf Coast bulk transactions where shipment is generally to be made in ninety days. Prices are FOB refineries, pipelines, or tanker terminals in districts designated.

Prices shown are for quantities in bulk such as tank car lots, motor transport lots or barge lots; and in cents per gallon; heavy fuel oils are in dollars per barrel of 42 U.S. gallons; wax and petrolatums are in cents per pound. Prices applying to barges or cargoes only are so designated.

Prices do not include taxes or inspection fees. Prices are published at the close of the business day.

Mid-Western prices in the tables were gathered from refiners with offices located in Chicago and the surrounding territory. While the prices are quoted on a Group 3 (Oklahoma) freight basis, this is in accordance with the custom of the oil industry which uses Group 3 as a price basis for the ease of comparing prices even when the material originates in another refining district. Other refinery prices are given by and for the particular refining district where the material is made and from which it is shipped.

When prices obtained by OILGRAM do not conform to these conditions the exception and the new conditions are noted in the news lead or in conjunction with the price table by footnote or otherwise, for the particular refinery or sales district involved.

Crude oil and products covered by OILGRAM'S news and price service, except where noted, have been represented to the publisher as fully up to the customary trade specifications indicated and according to the generally accepted methods of test: and all crude oil and all products thereof as having been lawfully produced and transported.

Any apparent error should be reported to the nearest OILGRAM or National Petroleum News office at once as no correction will be made after the second issue of the OILGRAM or National Petroleum News following its publication.

NOTICE—Owing to great demand, refiners generally limit quotations to regular customers and refuse bids, though higher, from others. Refiners' prices and sales shown; bids reported in market leads.

Summary of Daily Gasoline Prices (Oct. 21 to Oct. 27)

U. S. Motor, (ASTM octane)	Monday Oct. 27	Friday Oct. 24	Thursday Oct. 23	Wednesday Oct. 22	Tuesday Oct. 21
80-82 octane Ethyl:					
Oklahoma	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25	6.75 – 7.25
Mid-Western (Group 3 basis)	7.4 (1)	7.4 (1)	7.4 (1)	7.4 (1)	7.4 (1)
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	7 –7.125 (2)	7 –7.125 (2)	7–7.125 (2)	7–7.125 (2)	7–7.125 (2)
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	7.25 (1)	7.25 (1)	7.25 (1)	7.25 (1)	7.25 (1)
72-74 octane:					
Oklahoma	6 – 6.375	6 – 6.375	6 – 6.375	6 – 6.375	6 – 6.375
Mid-Western (Group 3 basis)	6 – 6.375	6 – 6.375	6 – 6.375	6 – 6.375	6 – 6.375
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	6 – 6.625	6 – 6.625	6 – 6.625	6 – 6.625	6 – 6.625
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	6.125– 6.25	6.125– 6.25	6.125– 6.25	6.125– 6.25	6.125– 6.25
63-66 octane:					
Oklahoma	5.625– 6	5.625– 6	5.625– 6	5.625– 6	5.625– 6
Mid-Western (Group 3 basis)	5.6 – 6	5.6 – 6	5.6 – 6	5.6 – 6	5.6 – 6
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5.625–6.25	5.625– 6.25	5.625– 6.25	5.625–6.25	5.625– 6.25
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5.75 – 5.875	5.75 – 5.875	5.75 – 5.875	5.75 – 5.875	5.75 – 5.875
60 octane & below:					
Oklahoma	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625	5.25 – 5.625
Mid-Western (Group 3 basis)	5.2 – 5.625	5.2 – 5.625	5.2 – 5.625	5.2 – 5.625	5.2 – 5.625
N. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5.25 – 5.875	5.25 – 5.875	5.25 – 5.875	5.25 – 5.875	5.25 – 5.875
W. Tex. (For shpt. to Tex. & N. M. dest'ns.)	5.375– 5.5	5.375– 5.5	5.375– 5.5	5.375– 5.5	5.375– 5.5
Motor Gasoline, 72-74 octane (ASTM)					
New York harbor	8 – 8.5	8 – 8.5	8 – 8.5	8 – 8.5	8 – 8.5
New York harbor, barges	7.9 – 8.5	7.9 – 8.5	7.9 – 8.5	7.9 – 8.5	7.9 – 8.5
Philadelphia district	8 – 8.25	8 – 8.25	8 – 8.25	8 – 8.25	8 – 8.25
Baltimore district	7.75–8.25 (2)	7.75–8.25 (2)	7.75–8.25 (2)	7.75–8.25 (2)	7.75–8.25 (2)
Motor Gasoline:					
Western Penna. Bradford-Warren:					
Min. 80 Oct. ('39 Research)	8 (2)	8 (2)	8 (2)	8 (2)	8 (2)
74-76 Oct. (ASTM)	7.75 (1)	7.75 (1)	7.75 (1)	7.75 (1)	7.75 (1)
74-76 Oct. (L-3)	7.5–7.75 (2)	7.5–7.75 (2)	7.5 –7.75 (2)	7.5–7.75 (2)	7.5–7.75 (2)
Western Penna. Other Districts:					
Min. 80 Oct. ('39 Research)	8 –8.25 (2)	8 – 8.25 (2)	8 – 8.25 (2)	8 – 8.25 (2)	8 – 8.25 (2)
74-76 Oct. (ASTM)	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
74-76 Oct. (L-3)	7.25 – 7.5	7.25 – 7.5	7.25 – 7.5	7.25 – 7.5	7.25 – 7.5

REFINERY PRICES

Gasoline—U. S. Motor (ASTM Octane) except where otherwise specified

Prices Effective	Oct. 27	Oct. 20
OKLAHOMA		
80-82 oct. Ethyl	6.75 – 7.25	6.75 – 7.25
72-74 oct.	6 – 6.375	6 – 6.375
63-66 oct.	5.625– 6	5.625– 6
60 oct. & below	5.25 – 5.625	5.25 – 5.625
60-62 400 e.p.	5.375 (1)	5.375 (1)
MID-WESTERN (Group 3 basis)		
80-82 oct. Ethyl	7.4 (1)	7.4 (1)
72-74 oct.	6 – 6.375	6 – 6.375
63-66 oct.	5.6 – 6	5.6 – 6
60 oct. & below	5.2 – 5.625	5.2 – 5.625
N. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
80-82 oct. Ethyl	7 –7.125 (2)	7 –7.125 (2)
72-74 oct.	6 – 6.625	6 – 6.625
63-66 oct.	5.625– 6.25	5.625– 6.25
60 oct. & below	5.25 – 5.875	5.25 – 5.875
60-62, 400 e.p.	5.5 – 6 (1)	5.5 – 6 (1)
W. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
80-82 oct. Ethyl	7.25 (1)	7.25 (1)
72-74 oct.	6.125– 6.25	6.125– 6.25
63-66 oct.	5.75 – 5.875	5.75 – 5.875
60 oct. & below	5.375– 5.5	5.375– 5.5
CENT. W. TEX. (Prices to truck transports)		
80 oct. & above	7.125 (2)	7.125 (2)
72-74 oct.	6.125 (2)	6.125 (2)
67-69 oct.	5.625 (2)	5.625 (2)
62 oct. & below	5.375 (2)	5.375 (2)
AMARILLO, TEX. (For shpt. to W. Okla. & Tex. differential territory.)		
60 oct. & below	5.375–5.875 (2)	5.375–5.875 (2)
60-62, 400 e.p.	5.5 – 6 (1)	5.5 – 6 (1)

Prices Effective	Oct. 27	Oct. 20
KANSAS (For Kansas destinations only)		
80-82 oct. Ethyl	7.5 (1)	7.5 (1)
72-74 oct.	6.3 – 6.375	6.3 – 6.375
63-66 oct.	5.9 – 6	5.9 – 6
60 oct. & below	5.5 – 5.625	5.5 – 5.625
ARK. (For shipment to Ark. & La.)		
72-74 oct.	6 (1)	6 (1)
70-72 oct.	5.875 (1)	5.875 (1)
60 oct. & below	5.5 (1)	5.5 (1)
WESTERN PENNA. (Motor gasoline.)		
Bradford-Warren:		
Min. 80 oct. ('39 research)	8 (2)	8 (2)
74-76 oct. (ASTM)	7.75 (1)	7.75 (1)
74-76 oct. (L-3)	7.5–7.75 (2)	7.5–7.75 (2)
Other districts:		
Min. 80 oct. ('39 research)	8 –8.25 (2)	8 – 8.25 (2)
74-76 oct. (ASTM)	7.25 – 7.75	7.25 – 7.75
74-76 oct. (L-3)	7.25 – 7.5	7.25 – 7.5
CENTRAL MICHIGAN (FOB Central Mich. refinery group basis for shpt. within Mich.; shpts. may originate at plants outside Central group)		
U.S. Motor: (Oct. L-3):		
72-74 oct.	8.5	8.5
67-69 oct.	7.7 – 7.75	7.7 – 7.75
Str. run gasoline, excluding Detroit shpt.	6 – 6.25	6 – 6.25
OHIO (S. O. Ohio quotations for statewide delivery and subject to exceptions for local price disturbances)		
72-74 oct.	8.375	8.375
CALIFORNIA U.S. Motor:		
58-61 grav., 375-400 e.p., 65 oct. & above	7 – 8	7 – 8
54-58 grav., for outside state shipment	5.5 – 7	5.5 – 7
54-58 grav., for instate shipment	5 – 6.75	5 – 6.75

Kerosine, Gas & Fuel Oils

Prices Effective	Oct. 27	Oct. 20
OKLAHOMA		
41-43 grav. w.w.	4.375– 4.75	4.375– 4.75
42-44 grav., w.w.	4.5 – 4.875	4.5 – 4.875
Range Oil	4 – 4.375	4 – 4.375
No. 1 P.W.	3.875– 4.25	3.875– 4.25
No. 1 straw	3.5 –4.25 (2)	3.5 –4.25 (2)
No. 2 straw	3.625– 4.125	3.625– 4.125
No. 3 fuel	3.5 – 3.625	3.5 – 3.625
U.G.I. Gas Oil	3.625 (1)	3.625 (1)
No. 6 fuel	$0.80-$0.90 (2)	$0.80-$0.90 (2)
14-16 fuel	$0.95 (2)	$0.95 (2)
MID-WESTERN (Group 3 basis)		
41-43 grav. w.w.	4.375– 4.75	4.375– 4.75
42-44 grav. w.w.	4.5 – 4.875	4.5 – 4.875
Range Oil	4 –4.2 (2)	4 –4.2 (2)
No. 1 p.w.	3.875– 4.125	3.875– 4.125
No. 2 straw	3.6 – 3.8	3.6 – 3.8
No. 3	3.5 – 3.7	3.5 – 3.7
No. 5	$0.85 (1)	$0.85 (1)
No. 6	$0.85-$0.875 (2)	$0.85-$0.875 (2)
N. TEX. (For shpt. to Tex. & N. M. dest'ns.)		
41-43 grav. w.w.	4.125– 4.875	4.125– 4.875
No. 1 P.W.	4.2 –4.5 (2)	4.2 –4.5 (2)
AMARILLO, TEX. (For shpt. to W. Okla. & Tex. differential territory.)		
41-43 grav. w.w.	4.75 (2)	4.75 (2)
No. 1 straw	4.3 (1)	4.3 (1)
KANSAS (For Kansas destinations only)		
41-43 grav. w.w.	4.7 (1)	4.7 (1)
42-44 gravity w.w.	4.8 – 4.875	4.8 – 4.875
No. 1 p.w.	4.2 – 4.3	4.2 – 4.3
No. 6 fuel	$0.90-$0.925 (2)	$0.85-$0.925 (2)

REFINERY PRICES (Continued)

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

NOTICE—Owing to great demand, refiners generally limit quotations to regular customers and refuse bids, though higher, from others. Refiners' prices and sales shown; bids reported in market leads.

Kerosine, Gas & Fuel Oil

(Continued)

Prices Effective	Oct. 27	Oct. 20
ARK. (For shipment to Ark. and La.)		
41-43 grav. w.w.	4.625 (1)	4.625 (1)
No. 1	4 (1)	4 (1)
No. 2	3.5 (1)	3.5 (1)
No. 3 fuel	3.5 (1)	3.5 (1)
Tractor fuel, for shpt. to Ark. points only	5.125 (1)	5.125 (1)
WESTERN PENNA.		
Bradford-Warren:		
45 grav. w.w.	6.25	6.25
46 grav. w.w.	6.375 (1)	6.375 (1)
No. 1 fuel	6.25 (1)	6.25 (1)
No. 2 "	6.125–6.25 (2)	6.125–6.25 (2)
No. 3 "	6.25 (1)	6.25 (1)
36-40 gravity	6.25 (1)	6.25 (1)
Other districts:		
45 grav. w.w.	6.25 – 6.5	6.25 – 6.5
46 grav. w.w.	6.25 – 6.625	6.25 – 6.625
47 grav. w.w.	6.375– 6.625	6.375– 6.625
No. 1 fuel	5.875– 6	5.875– 6.25
No. 2 "	5.875– 6.375	5.875– 6.375
No. 3 "	5.875– 6	5.875– 6.25
36-40 grav., Pittsburgh dist. prices excluded	5.75 – 6	5.75 – 6.25
CENTRAL MICHIGAN (FOB Central Mich. refinery group basis for shpt. within Mich.; shpts. may originate at plants outside Central group.)		
47-49 gravity w.w.	5.8 – 6	6 – 6.375
P.W. Distillate	5.5 – 6	5.5 – 6
No. 3 gas oil, Straw	5 – 5.8	5 – 5.8
U.G.I. gas oil	4.5–4.875 (2)	4.5–4.875 (2)
Fuel Oils (Vis. at 100).		
300-500 Vis.	4 –4.25 (2)	4 –4.25 (2)
100-300 Vis.	4.5 (1)	4.5 (1)
OHIO (S. O. Ohio quotations for statewide delivery)		
Kerosine	7	7
CALIFORNIA		
40-43 grav. w.w.	4.5 – 6	4.5 – 6
San Joaquin Valley:		
Heavy fuel	$0.80	$0.70 –$0.85
Light fuel	$0.85	$0.75 –$0.85
Diesel fuel	2.75 – 4	2.75 – 4
Stove dist.	2.75 – 4	2.75 – 4
Los Angeles:		
Heavy fuel	$0.70 –$0.80	$0.65 –$0.75
Light fuel	$0.80 –$0.85	$0.72 –$0.80
Diesel fuel	2.75 – 4	2.75 – 4
Stove dist.	2.75 – 4	2.75 – 4
San Francisco:		
Heavy fuel	$0.85	$0.80
Light fuel	$0.90	$0.90
Diesel fuel	4.5	4.5
Stove dist.	5.5	5.5

Note: All above heavy fuels meet Pacific specification 400; light fuel, spec. 300; Diesel fuels, spec. 200; and stove distillate, spec. 100.

Lubricating Oils

WESTERN PENNA.

Prices are for sales made, or offers reliably reported, to jobbers & compounders only.

Viscous Neutrals—No. 3 col. Vis. at 70°F

200 Vis. (180 at 100°) 420-425 fl.		
0 p.t.	40.5 (1)	40.5 (1)
10 p.t.	39.5 (1)	39.5 (1)
15 p.t.	38.5 (1)	38.5 (1)
25 p.t.	33	33
150 Vis. (143 at 100) 400-405 fl.		
0 p.t.	38.5 (1)	38.5 (1)
10 p.t.	37.5 (1)	37.5 (1)
15 p.t.	36.5 (1)	36.5 (1)
25 p.t.	31	31
Cylinder Stocks		
Brt. stk., 145-155 vis. at 210°, 540-550 fl., No. 8 col.		
10 p.t.	30.5 (1)	30.5 (1)
15 p.t.	29.5 (1)	29.5 (1)
25 p.t.	25–27	25–27.5
600 S.R. filterable	15–17	15–17
650 S.R.	15.5–17.5	15.5–17.5
600 fl.	16–18	16–18
630 fl.	17–18.5	17–18.5

MID-CONTINENT (F. o. b. Tulsa)

Neutral Oils (Vis. at 100° F. 0 to 10 P.P.)

Pale Oils: Vis.	Color		
60- 85—No. 2		8 – 8.5	8 – 8.5
86-110—No. 2		8.5 – 8.75	8.5 – 8.75
150—No. 3		14.5	14.5
180—No. 3		15	15
200—No. 3		15–15.5	15–15.5
250—No. 3		16.5	16.5
280—No. 3		17–17.5	17–17.5
300—No. 3		18–18.5	18–18.5

Lubricating Oils (Cont'd)

Prices Effective	Oct. 27	Oct. 20
Red Oils:		
180—No. 5	15 (1)	15 (1)
200—No. 5	15–15.5 (2)	15–15.5 (2)
280—No. 5	17.5 (1)	17.5 (1)
300—No. 5	17.5–18.5	17.5–18.5

Note. Viscous Neutrals, 15-25 p.p. generally are quoted 0.5c under 0-10 p.p. oils. Non-viscous oils, 15-25 p.p., generally are quoted 0.25c under 0-10 p.p. oils.

Bright Stock—Vis. at 210°		
200 Vis. D	27 (1)	27 (1)
150-160 Vis. D:		
0 to 10 p.p.	23–23.5	23–23.5
10 to 25 p.p.	22.5–23	22.5–23
25 to 40 p.p.	23 (1)	23 (1)
150-160 vis. E	22–22.5	22–22.5
120 Vis. D:		
0 to 10 p.p.	22–22.5	22–22.5
600 S.R. Dark Green	9–9.5 (2)	9–9.5 (2)
600 S.R. Olive Green	10–11	10–11
631 S.R.	18.5 (1)	18.5 (1)
Black Oil	4–5.5 (2)	4–5.5 (2)

SOUTH TEXAS Neutral Oils

Vis.	Color		
Pale Oils: (*Vis. at 100°F*			
100 No. 1½-2½		6.5	6.5
200 No. 2-3		8.75	8.75
300 No. 2-3		9.25	9.25
500 No. 2½-3½		10	10
750 No. 3-4		10.25	10.25
1200 No. 3-4		10.375	10.375
2000 No. 4		10.5	10.5
Red Oils:			
100 No. 5-6		6.5 (2)	6.5 (2)
200 No. 5-6		8.75	8.75
300 No. 5-6		9.25	9.25
500 No. 5-6		10	10
750 No. 5-6		10.25	10.25
1200 No. 5-6		10.375	10.375
2000 No. 5-6		10.5–11.5	10.5–11.5

(a) These prices correct for Oct. 13.

CHICAGO (From Mid-Continent p.l. crude.)

Neutral oils (Vis. at 100° F. 0 to 10 p.p.)

Pale Oils Vis.	Color		
60-85—No. 2		9.5 (1)	9.5 (1)
86-110—No. 2		10 (1)	10 (1)
150—No. 3		15.5 (1)	15.5 (1)
180—No. 3		16 (1)	16 (1)
200—No. 3		16 (1)	16 (1)
250—No. 3		17 (1)	17 (1)
Red Oils:			
180—No. 5		16 (1)	16 (1)
200—No. 5		16 (1)	16 (1)
250—No. 5		17 (1)	17 (1)
280—No. 5		18 (1)	18 (1)
300—No. 5		18.5 (1)	18.5 (1)

Note: Viscous oils, 15 to 30 p.p. are quoted 0.5c lower; 60-85 and 86-110 No. 2 non-viscous oils, 15 to 30 p.p., 0.25c lower.

Unfiltered Steam Refined: (Viscosity at 210°)		
140	11.5 (1)	11.5 (1)
160	12.5 (1)	12.5 (1)
200	13.5 (1)	13.5 (1)
Bright stocks, 160 vis. at 210 No. 8 color:		
0 to 10 p.p.	24 (1)	24 (1)
15 to 25 p.p.	23.5 (1)	23.5 (1)
30 to 40 p.p.	21.5 (1)	21.5 (1)
E filtered Cyl. Stock	15.5 (1)	15.5 (1)

Note: To obtain prices delivered in Chicago, add 0.25c per gal.

Natural Gasoline

(Group 3 & Breckenridge prices are to blenders on freight basis shown below. Shipments may originate in any Mid-Continent manufacturing district.)

FOB GROUP 3		
Grade 26-70	5.125 (Sales)	5.125-5.25 (Sales)
FOB BRECKENRIDGE		
Grade 26-70	4.75 (Sales)	4.75 (Sales)
CALIFORNIA (FOB plants in Los Angeles basin)		
75-85, 350-375 e.p. for blending	4.75 – 5.25	4.75 – 5.25

Naphtha and Solvent

Prices Effective	Oct. 27	Oct. 20
(FOB Group 3)		
Stoddard solvent	6.625	6.625
Cleaners' naphtha	7.125	7.125
V. M. & P. naphtha	7.125	7.125
Mineral spirits	6.125	6.125
Rubber solvent	7.125	7.125
Lacquer diluent	7.375– 8.125	7.375– 8.125
Benzol Diluent	7.875– 8.625	7.875– 8.625
WESTERN PENNA		
Untreated naphtha	6.75–7.25 (2)	6.75–7.25 (2)
Stoddard solvent	7.25 – 7.5	7.25 – 7.5
OHIO (S. O. Ohio quotations for statewide delivery):		
V.M.&P. naphtha, D.C. naphtha, Varnolene & Sohio solvent	10	10
Rubber solvent	9	9

Wax

White Crude Scale:

WESTERN PENNA. (Bbls. C.L., N. Y.)		
122-124 A.m.p.	6.25	6.25
124-126 A.m.p.	6.25	6.25
OKLAHOMA (Bbls. or burlap bags, C.L.)		
124-6 AMP	6.25 (1)	6.25 (1)
131-3 AMP	6.375 (1)	6.375 (1)

CHICAGO (FOB Chicago district refinery of one refiner, in bags or slabs loose, carloads. Melting points are EMP (ASTM) methods: add 3° F. to convert into AMP.)

Fully refined:		
122-124 (bags only)	5.9	5.9
125-127	5.9	5.9
127-129	6.15	6.15
130-132	6.85	6.85
132-134	7.1	7.1
135-137	7.85	7.85

Petrolatums

WESTERN PENNA. (Bbls., carloads; tank cars, 0.5c per lb. less.)		
Snow White	6.125– 7	6.125– 7
Lily White	5.375– 6.125	5.375– 6.125
Cream White	4.375– 5.375	4.375– 5.375
Light Amber	3.375– 3.875	3.375– 3.875
Amber	3.125– 3.625	3.125– 3.625
Red	3 – 3.5	3 – 3.5

Group 3 Freight Rates

To Division Headquarters Points of Standard Oil Co. of Indiana

	Gasoline Kerosine Cents per Cwt.	Cents per gal. 6.6 lbs.	Distillate-Gas Oil-Fuel Oil Cents per Cwt.	Cents per gal. 7.4 lbs.
Chicago, Ill.	36	2.376	32	2.368
Decatur, Ill.	32	2.112	31	2.294
Joliet, Ill.	36	2.376	32	2.368
Peoria, Ill.	33	2.178	31	2.294
Quincy, Ill.	31	2.046	29	2.146
Indianapolis, Ind.	38	2.508	39	2.886
Evansville, Ind.	35	2.310	37	2.738
South Bend, Ind.	44	2.904	**42	**3.108
Detroit, Mich.	64	4.224	51	3.774
Grand Rapids, Mich.	55	3.630	**50	**3.700
Saginaw, Mich.	66	4.356	53	3.922
Green Bay, Wis.	41	2.706	41	3.034
Milwaukee, Wis.	39	2.574	34.5	2.553
LaCrosse, Wis.	37	2.442	37	2.738
Minneapolis-St. Paul	37	2.442	37	2.738
Duluth, Minn.	41	2.706	41.5	3.071
Mankato, Minn.	37	2.442	37	2.738
Des Moines, Ia.	29	1.914	29	2.146
Davenport, Ia.	33	2.178	31	2.294
Mason City, Ia.	34	2.244	33.5	2.479
St. Louis, Mo.	29	1.914	26.5	1.961
Kansas City, Mo.	22	1.452	22.5	1.665
St. Joseph, Mo.	25	1.650	22.5	1.665
Fargo, N. D.	51	3.366	50.5	3.737
Huron, S. D.	43	2.828	42.5	3.145
Wichita				
From Ponca City	7.5	*0.495	7.5	†0.555
From Tulsa	12.5	*0.825	12.5	†0.925
From Cushing	11	*0.726	11	†0.814

*This rate also includes distillate rate at 6.6 lbs. per gal.

**This rate applies only to residual fuel and gas oil.

†This rate is exclusive of distillate which is based on 6.6 lbs. per gal. from Ponca City, Tulsa and Cushing, Okla., to Wichita. Includes only gas oil and fuel oil.

NOTE: There is no Group 3 rate to Wichita, Kans.

TANK WAGON PRICES

Commercial or consumer tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1.5c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes where levied are indicated in footnotes. Dealer discounts are shown in footnotes. These prices in effect Oct. 27, 1941 as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. New Jersey

Esso (*Regular Grade*)

	Consumer Tank Wagon	Dealer T.W.	Gaso-line Taxes	Kero-sine T.W.
*Atlantic City, N. J	9	9.5	4.5	7.9
*Newark, N. J	9	9.5	4.5	7.9
Annapolis, Md	9.35	9.85	5.5	9.7
Baltimore, Md	8.75	9.25	5.5	8.7
Cumberland, Md	10.15	10.65	5.5	10.2
Washington, D. C	9	9.5	3.5	9.2
Danville, Va	10.45	10.95	6.5	10.45
Norfolk, Va	9.25	9.75	6.5	10.2
Petersburg, Va	9.55	10.05	6.5	11.2
Richmond, Va	9.55	10.05	6.5	11.2
Roanoke, Va	10.75	11.25	6.5	10.7
Charleston, W. Va	11.05	11.55	6.5	11.5
Parkersburg, W. Va	10.35	10.85	6.5	11.2
Wheeling, W. Va	10.35	10.85	6.5	11.8
Charlotte, N. C	10.9	11.4	7.5	9.5
Hickory	11.45	11.95	7.5	10.5
Mt. Airy, N. C	11.3	11.8	7.5	9.7
Raleigh, N. C	10.65	11.15	7.5	10.5
Salisbury, N. C	10.95	11.45	7.5	10.9
Charleston, S. C	9.75	10.25	7.5	....
Columbia, S. C	10.6	11.1	7.5	....
Spartanburg, S. C	11.3	11.8	7.5	....

	Mineral Spirits T.W.	V.M.&P. T.W.
Newark, N. J	12.5	14
Baltimore, Md	15	....
Washington, D. C	15	....

Fuel Oils—T.W.	No. 1	No. 2	No. 3
Atlantic City, N. J	7.9	7.2	7.2
Newark	7.9	7.2	7.2
Annapolis, Md	....	7.45	....
Baltimore	7.7	7.2	7.2
Washington, D. C	8.2	7.45	7.45
Norfolk, Va	7.9	7	7
Petersburg	8.2	7.2	....
Richmond	8.2	7.2	7.2
Charlotte, N. C	8.5	8.6	....
Hickory	....	8.2	....
Raleigh	9.5	8.3	....
Charleston, S. C	....	7.2	....
Columbia	....	8.2	....
Spartanburg	....	9	....

*Effective May 20, '41, minimum retail resale price of 13c posted thru New Jersey.

Discounts:

Esso gasoline—to undivided dealers, 0.5c off dealer t.w.

Kerosine—1c off t.w. price for 25 gals. or more, under contract thru territory (Baltimore city contract not necessary) except no discount in state of New Jersey.

Naphthas—To buyers taking following quantities at one time: Newark, 2c per gal. on 200 gals. or more, less than 200 gals. 0.5c higher price: Baltimore, 2c off on 25 to 100 gals. and 3c on over 100 gals.; Washington, 2c off to contract buyers.

Socony-Vacuum Oil Co., Inc.

Socony Mobilgas (*Regular Grade*)

	Com. Cons. T.W.	Undiv. Dlr. T.W.	Gaso-line Taxes
New York City:			
Manhattan & Bronx	8.9	9.4	*5.5
Kings & Queens	8.9	9.4	*5.5
Richmond	8.5	9	5.5
Albany, N. Y	8.7	9.2	5.5
Binghamton, N. Y	9.8	10.3	5.5
Buffalo, N. Y	9	9.5	5.5
Jamestown, N. Y	9.2	9.7	5.5
Mt. Vernon, N. Y	8.9	9.4	5.5
Plattsburg, N. Y	9.8	10.3	5.5
Rochester, N. Y	9.6	10.1	5.5
Syracuse, N. Y	9.3	9.8	5.5
Bridgeport, Conn	8.8	9.3	4.5
Danbury, Conn	9.3	9.8	4.5
Hartford, Conn	9.4	9.9	4.5
New Haven, Conn	8.8	9.3	4.5
Bangor, Me	9.5	10	5.5
Portland, Me	9.1	9.6	5.5
Boston, Mass	8.7	9.2	4.5
Concord, N. H	10.2	10.7	5.5
Lancaster, N. H	10.8	11.3	5.5
Manchester, N. H	10.1	10.6	5.5
Providence, R. I	8.8	9.3	4.5
Burlington, Vt	9.7	10.2	5.5
Rutland, Vt	9.8	10.3	5.5

	Mineral Spirits T.W.	V.M.&P. T.W.
Buffalo, N. Y	11.9	13.1
†New York City	10.5	11.5
Rochester, N. Y	12.7	13.9
Syracuse, N. Y	13.5	....
Boston, Mass	11.5	12.5
Hartford Conn	13.8	14.8
Providence, R. I	12.5	13.5

	Kero-sine Yard	Kero-sine TW	Mobil-fuel Diesel TC	Mobil-fuel Diesel TW	Mobil-heat Fuel Yard	Mobil-heat Fuel TW
New York:						
Manhat'n & Bronx	5.6	8	...	7.5	5.5	7.2
Kings & Queens	5.6	8	...	7.5	5.5	7.2
Richmond	5.5	8	...	7.4	5.4	7
Albany	5.7	7.7	5.5	7.5	5.5	7.2
Binghamton	7.1	9.1	...	8.9	6.9	8.4
Buffalo	6.8	8.8	6.7	8.7	6.7	8.2
Jamestown	6.9	8.9	...	8.8	6.8	8.2
Mt. Vernon	5.7	8.2	...	7.6	5.6	7.2
Plattsburg	6.3	8.3	...	8.1	6.1	7.6
Rochester	6.9	8.9	6.4	8.4	6.4	7.9
Syracuse	6.7	8.7	6.3	8.3	6.3	7.8
Conn.:						
Bridgeport	5.8	7.8	...	...	5.7	7
Danbury	6.3	8.3	...	...	6	7.3
Hartford	5.9	7.9	...	7.7	5.7	7.2
New Haven	5.6	7.6	...	7.5	5.5	7.1
Maine:						
Bangor	6.1	8.1	5.9	7.9	5.9	7.3
Portland	5.7	8.1	5.5	7.5	5.5	7.2
Mass.:						
Boston	5.8	8	5.6	7.6	5.6	7.2
N. H.:						
Concord	6.6	8.6	...	...	6.7	8.2
Lancaster	7.7	9.7	...	...	7.7	9.2
Manchester	6.7	9	...	...	6.4	7.9
R. I.:						
Providence	5.8	7.8	5.6	7.6	5.6	7.1
Vermont:						
Burlington	6.3	8.3	6	8	6	7.4
Rutland	6.5	8.5	...	8.2	6.2	7.7

*Plus 2% city sales tax computed at time of each sale.

†Prices apply to consumers only in quantities over 1000 gals. annually; for quantities under 1000 gals. annually, add 0.5c per gal.

Discounts: Diesel—On t.w. deliveries, 0.5c for at least 400 gals.; 1c for full tank truck.

Atlantic Refining

Atlantic White Flash Gasoline (*Regular Grade*)

	Commercial T.C.	Dealer T.W.	Gaso-line Taxes	Kero-sine T.W.
Philadelphia, Pa	8.5	9.5	5.5	10.15
Pittsburgh	9	10	5.5	10.5
Allentown	9	10	5.5	10.5
Erie	9	10	5.5	10.5
Scranton	9	10	5.5	10.5
Altoona	9	10	5.5	10.5
Emporium	9	10	5.5	10.5
Indiana	9	10	5.5	10.5
Uniontown	9	10	5.5	10.5
Harrisburg	9	10	5.5	10.5
Williamsport	9	10	5.5	10.5
Dover, Del	...	10	5.5	10.5
Wilmington, Del	...	9.5	5.5	10
Boston, Mass	...	9.7	4.5	8
Springfield, Mass	...	10.6	4.5	8.9
Worcester, Mass	...	10.3	4.5	8.5
Fall River, Mass	...	9.8	4.5	8.6
Hartford, Conn	...	10.4	4.5	7.9
New Haven, Conn	...	9.8	4.5	9
Providence, R. I	...	9.8	4.5	8.6
Atlantic City, N. J	...	9.5	4.5	7.9
Camden, N. J	...	9.5	4.5	7.9
Trenton, N. J	...	9.5	4.5	7.9
Annapolis, Md	...	9.85	5.5	8.7
Baltimore, Md	...	9.25	5.5	7.7
Hagerstown, Md	...	10.35	5.5	8.2
Richmond, Va	...	10.05	6.5	10.2
Wilmington, N. C	...	10.35	7.5	9.8
Brunswick, Ga	...	9.5	7.5	*9
Jacksonville, Fla	...	9.5	8.5	10

	Mineral Spirits T.W.†	V.M.&P. T.W.†
Philadelphia, Pa	10.5	12
Lancaster, Pa	11.5	13
Pittsburgh, Pa	12.5	12.5

Fuel Oils—T.W.	1	2	3	5	6
Phila., Pa	8	7.2	7.2	4.75	3.75
Allentown, Pa	8.5	7.5	7.5	....	....
Wilmington, Del	8.00	7.2	7.2	....	....
Springfield, Mass	8.9	7.6	7.6	....	....
Worcester, Mass	8.5	7.5	7.5	....	....
Hartford, Conn	7.9	7.2	7.2	....	....

*Does not include 1c Georgia kerosine tax.

†Mineral Spirits prices also apply to Stoddard Solvent; V.M.&P. prices also apply to Light Cleaners Naphtha.

Discounts:

Gasoline—to undivided dealers, 0.5c off dealer t.w., except Georgia & Florida dealer t.w. and undivided dealer t.w. prices are same.

Kerosine—Thru Penna. & Delaware, 2c off t.w. price on t.w. deliveries of 25 gals. or more at one time.

S. O. Ohio††

***Sohio X-70 Gasoline (*Regular Grade*)**

	Consumer T.W.	**Re-sellers	‡S.S.	Gaso-line Taxes	†Kero-sine T.W.
Ohio, Statewide	12	10	13.5	5.5	9
Akron	12	9.5	12	5.5	9
Cincinnati	12	9.5	12.5	5.5	9
Cleveland	12	9.5	12.5	5.5	9
Columbus	12	9.5	12.5	5.5	9
Dayton	12	9.5	12.5	5.5	9
Marietta	12	9.5	12.5	5.5	9
Portsmouth	12	9.5	12.5	5.5	9
Toledo	12	9.5	12.5	5.5	9
Youngstown	12	9.5	12.5	5.5	9

Aviation Gasoline—Statewide

	Consumer T.W.	Gasoline Taxes
Sohio Aviation	14.5	5.5
Esso Ethyl Aviation 74 Oct.	15.5	5.5
Esso Ethyl Aviation 80 Oct.	16.5	5.5
Esso Ethyl Aviation 91 Oct.	17.5	5.5
Esso Ethyl Aviation 100 Oct.	24.5	5.5

	†Naphthas—T.W. State-wide	Lucas County
S. R. Solvent	13.5	13.5
D. C. Naphtha	14.5	14.25
V.M.&P. Naphtha	14.5	14.25
Varnolene	14.5	14.25
Sohio Solvent	14.5	14.25

Fuel Oils—T.W.	No. 1	No. 2	No. 3	No. 4
Ohio, Statewide	8	8	7.5	....
Cleveland	10	10	9.5	7.25

*Renown (third-grade) prices are same as X-70 unless otherwise noted.

**Except authorized agents.

†Kerosine prices are ex 1c state tax. Naphtha prices are ex 1.5c federal & 4c state tax.

‡Prices at company-operated stations.

††Statewide prices are subject to exceptions other than those shown.

Discounts:

Esso aviation—on contract to hangar operators and resellers, 2c off consumer t.w.

Fuel Oils—Statewide prices are for t.w. & drum deliveries of 50 gals. or more; prices for deliveries of less than 50 gals. are 0.5c higher. Cleveland Nos. 1, 2, and 3 prices are for bulk deliveries of 5 to 99 gals.; 100 gals. and over are 2c less. Cleveland No. 4 price is for full compartment hose dump only.

Naphthas—to contract consumers off t.w. prices—Statewide: 300 to 999 gals., 0.5c; 1000 to 2499 gals., 0.75c; 2500 to 4999 gals., 1c; 5000 or more gals., 1.5c. Lucas County: Less than 50 gals., tank wagon price; 50 to 249 gals., 0.5c; 250 to 499 gals., 1c; 500 gals. or over, 1.5c.

S. O. Kentucky

Crown Gasoline (*Regular*)
Standard (*Third Grade*)

	†Net Dealer Crown	Standard	Gaso-line Taxes	Kero-sine T.W.
Covington, Ky	9.5	8.5	6.5	9
Lexington, Ky	10.5	9.5	6.5	9
Louisville, Ky	10	9	6.5	8.5
Paducah, Ky	10	9	6.5	8.5
Jackson, Miss	10	9	7.5	*8.5
Vicksburg, Miss	9.5	8.5	7.5	*8
Birmingham, Ala	10	9	*8.5	8
Mobile, Ala	9	7	*9.5	8.5
Montgomery, Ala	10	9	*9.5	*9
Atlanta, Ga	10.5	9.5	7.5	*9
Augusta, Ga	10.5	...	7.5	*8.5
Macon, Ga	10.5	9.5	7.5	*9
Savannah, Ga	9.5	...	7.5	*8
Jacksonville, Fla	9.5	8.5	8.5	8
Miami, Fla	9.5	...	8.5	8
Pensacola, Fla	9	8	*9.5	8
Tampa, Fla	9.5	8.5	8.5	8

*Taxes: In tax column are included these city and county gasoline taxes: Mobile, 2c city; Birmingham, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Montgomery, Ala. have 1c kerosine tax, Mississippi 0.5c, not included in above prices.

†Consumer t.w. prices are same as net dealer prices.

S. O. Indiana

Red Crown (*Regular Grade*)
Standard (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown	Stano-lind	Gaso-line Taxes	Kero-sine T.W.
Chicago, Ill	11.6	9.6	8.5	4.5	10.3
Decatur, Ill	10.9	8.9	8	4.5	9.5
Joliet, Ill	11.9	9.6	8.5	4.5	10.3

(Continued on next page)

Above prices include these inspection fees on both gasoline and kerosine unless otherwise specified, per gallon:
Alabama 1/40c on gasoline, 1/2c on kerosine; Arkansas 1/20c; Florida 1/8c; Illinois 3/100c; Indiana 1/5c in lots of 25 bbls. or less, 2/25c in lots of more than 25 bbls.; Kansas 1/50c; Louisiana 1/32c; Minnesota 7/200c; Missouri 1/50c; Nebraska 3/100c; Nevada, gasoline 1/20c; North Carolina 1/4c; North Dakota 1/20c; Oklahoma 2/25c; South Carolina 1/8c; South Dakota 1/20c; Tennessee 2/5c; and Wisconsin 3/100c.
Kerosine inspection fees only: Iowa 3/50c; Michigan 1/5c per gal.

TANK WAGON PRICES

Commercial or consumer tank car, tank wagon, dealer, and service station prices for gasoline **do not include taxes;** *they do, however, include inspection fees as shown in general footnote. Gasoline taxes, shown in separate column, include 1.5c federal, and state taxes; also city and county taxes as indicated in footnotes. Kerosine tank wagon prices also do not include taxes; kerosine taxes where levied are indicated in footnotes. Dealer discounts are shown in footnotes. These prices in effect Oct. 27, 1941 as posted by principal marketing companies at their headquarters offices, but subject to later correction.*

S. O. Indiana (Cont'd)

Red Crown (*Regular Grade*)
Stanolind (*Third Grade*)

	Red Crown Cons. T.W.	Dealer Prices Red Crown	Stano-lind	Gaso-line Taxes	Kero-sine T.W.
Peoria, Ill.	11.7	9.2	9.1	4.5	10.1
Quincy, Ill.	8.9	7.9	7.9	4.5	10
Indianapolis, Ind.	11.6	9.7	9.6	5.5	*9.8
Evansville, Ind.	11.4	9.9	7.9	5.5	*9.6
South Bend, Ind.	12	10.5	10	5.5	*10.2
Detroit, Mich.	11.4	9.9	9.4	4.5	9.6
Grand Rapids, Mich.	11.4	9.9	9.4	4.5	9.6
Saginaw, Mich.	11.4	9.9	9.4	4.5	9.6
Green Bay, Wis.	12.2	10.7	10.2	5.5	10.6
Milwaukee, Wis.	12.1	10.6	10.1	5.5	10.5
La Crosse, Wis.	11.9	10.4	9.9	5.5	10.3
Minneapolis-St. Paul	11.9	10.4	9.5	5.5	10.3
Duluth, Minn.	12.2	10.7	10.2	5.5	10.6
Mankato, Minn.	11.9	10.4	9.5	5.5	10.3
Des Moines, Ia.	11.4	7.4	6.9	4.5	*9.8
Davenport, Ia.	11.7	10.2	9.7	4.5	*10.1
Mason City, Ia.	11.7	10.2	9.7	4.5	*10.1
St. Louis, Mo.	10.3	8.8	8.6	*4.5	9.8
Kansas City, Mo.	10.4	8.9	7.9	*4.5	9.4
St. Joseph, Mo.	11.2	9.7	8.7	*4.5	9.6
Fargo, N. D.	12.9	11.4	10.5	5.5	11.3
Huron, S. D.	12.3	10.8	10.3	5.5	10.7
Wichita, Kans.	10.3	8.2	6.5	4.5	8

	Stanavo Aviation 73 Octane	
Chicago, Ill.	15.7	4.5
Milwaukee, Wis.	15.9	5.5
Minneapolis, Minn.	15.7	5.5
St. Louis, Mo.	15.2	*4.5
Kansas City, Mo.	14.8	*4.5
Fargo, N. D.	16.7	5.5
Huron, S. D.	16.1	5.5

	Oleum Spirits	V.M.&P. Naphtha	Stani-sol	*Taxes
(Prices are base prices before discounts)				
Chicago	13.5	13.8	12.8	4.5
Detroit	15.8	15	16.3	4.5
K. C., Mo.	13.3	14.3	13.8	1.5
St. Louis, Mo.	13.7	14.7	13.2	1.5
Milwaukee	14.4	15.4	13.1	5.5
Minneap'ls	14.2	15.2	13.5	5.5

	Fuel Oils T.W. Standard Heater Oil	
		Chicago:
1-99 gals.		9
100-149 gals		8
150 gals. & over		7.5

	Stanolex Fuel Oil No. 1	Stanolex Furnace Oil
1-99 gals.	8.5	8.5
100-149 gals.	7.5	7.5
150-399 gals.	7.5	7.5
400 gals. & over	7	7

	Stanolex Fuel Oil A	Stanolex Fuel Oil B
1-99 gals.	8	8
100-399 gals.	7	7
400-749 gals.	6	6
750 gals. & over	5.25	5.25

	Stanolex Bunker C Fuel Oil
1-399 gals	6.5
400-999 gals	5.5
1000 gals. & over	4.5

Other Points:	Stanolex No. 1	Stanolex Furnace Oil
Indianapolis		
1-99 gals.	...	*8.7
100 gals. & over	...	*7.7
Detroit		
1-99 gals.	...	7.8
100 gals. & over	...	6.8
Milwaukee		
1-99 gals.	9.2	8.7
100 gals. & over	8.2	7.7
Minneapolis		
1-99 gals.	8.5	8.5
100 gals. & over	...	7.5
100-199 gals	8	...
200 gals. & over	7.5	...
St. Louis		
1-99 gals.	8.3	7.8
100 gals. & over	7.3	6.8
Kansas City		
1-49 gals.	7.8	...
50 gals. & over	6.8	...
1-99 gals.	...	7.8
100 gals. & over	...	6.8

*Taxes: In gasoline tax column are included these city taxes—Kansas City, St. Joseph, and St. Louis, 1c. Indiana kerosine and fuel oil prices are ex 4c state tax: Iowa kerosine prices are ex 3c state tax. In naphtha tax column are included 1.5c federal tax and state taxes.

S. O. Nebraska

Standard Red Crown Gasoline (*Regular Grade*)

	T.W.	Dealer	Gaso-line Taxes	Kero-sine T.W.
Omaha	11.4	8.9	6.5	9.8
McCook	12	9.4	6.5	9.5
Norfolk	11.9	10.4	6.5	10.3
North Platte	12.3	9.9	6.5	10.7
Scottsbluff	12.4	9.5	6.5	9.5

S. O. Louisiana

Esso Gasoline (*Regular Grade*)

	Consumer Tank Wagon	Dealer T.w.	Gaso-line Taxes	Kero-sine T.W.
New Orleans, La.	8.75	9.25	8.5	*9
Baton Rouge, La.	8.75	9.25	8.5	*9.5
Alexandria, La.	8.75	9.25	8.5	*9.5
Lafayette, La.	9	9.5	8.5	*9
Lake Charles, La.	9	9.5	8.5	*11
Shreveport, La.	8.5	9	8.5	*8
Knoxville, Tenn.	11.5	12	8.5	12.5
Memphis, Tenn.	8.75	9.25	8.5	10.5
Chattanooga, Tenn.	10.5	11	8.5	11
Nashville, Tenn.	10.5	11	8.5	10
Bristol, Tenn.	9.75	10.25	8.5	12
Little Rock, Ark.	9.5	10	8	10

*Louisiana kerosine prices are ex 1c state tax.
Discounts:
Esso Gasoline—To undivided dealers, 0.5c off dealer t.w.

Humble Oil & Refining Co.

Humble Motor Fuel (*Regular Grade*)
Thriftane (*Third Grade*)

	Humble *Tank Wagon	Humble Re-tail	Thriftane *Tank Wagon	Thriftane Re-tail	Gaso-line Taxes
Dallas, Tex.	8.5†	11.5	7.5†	9.5	5.5
Ft. Worth, Tex.	8.5††	10.5	7.5‡	9	5.5
Houston, Tex.	8.5	12.5	7.5	10.5	5.5
San Antonio, Tex.	8.5	12.5	7.5	10.5	5.5

	Kerosine *Tank Wagon	Kerosine Retail
Dallas, Tex.	7	11
Ft. Worth, Tex.	7	11
Houston, Tex.	8	11
San Antonio, Tex.	7	10
74 Oct. Aviation Gasoline, Clear		Tank Car
FOB Baytown, Tex.		8.5

*To all classes of dealers & consumers.
†Less 1c allowance to dealers only.
‡Less 1½c allowance to dealers only.
††Less 2c allowance to dealers only.

The Texas Co.

	Gasoline—Dealer Fire-Chief (*Regular*)	T.W. Indian (*3rd Grade*)	Gaso-line Taxes
Dallas, Tex.	8.5*	7.5*	5.5
Ft. Worth, Tex.	8.5*	7.5*	5.5
Wichita Falls, Tex.	8.5	7.5	5.5
Amarillo, Tex.	8.5	7.5	5.5
Tyler, Tex.	8.5	7.5	5.5
El Paso, Tex.	11	10.5	5.5
San Angelo, Tex.	8.5	7.5	5.5
Waco, Tex.	8.5*	7*	5.5
Austin, Tex.	8.5	7.5	5.5
Houston, Tex.	8.5	7.5	5.5
San Antonio, Tex.	8.5	7.5	5.5
Port Arthur, Tex.	8.5	7.5	5.5

*Less 1c temporary allowance to all dealers.

Continental Oil Co.

	Conoco Bronz-z-z (*Regular*) †Tank Wagon	De-mand (*3rd Grade*)	Gaso-line Taxes	Kero-sine T.W.
Denver, Col.	10	9	5.5	11
Grand Junction, Col.	12.5	11.5	5.5	12.5
Pueblo, Col.	9.5	8.5	5.5	9.5
Casper, Wyo.	11.5	10.5	5.5	12
Cheyenne, Wyo.	10.5	9.5	5.5	11.5
Billings, Mont.	11.5	10.5	6.5	12.5
Butte, Mont.	10.5	9.5	6.5	13.5
Great Falls, Mont.	10.5	9.5	6.5	12.5
Helena, Mont.	10.5	9.5	6.5	13
Salt Lake City, Utah	13.5	12.5	5.5	14.5
Boise, Ida.	13.6	12.6	6.5	16.5
Twin Falls, Ida.	14.6	13.6	6.5	17
Albuquerque, N. M.	10.5	9.5	*7	10
Roswell, N. M.	8.5	7.5	*7	8.5
Santa Fe, N. M.	10.5	9.5	*7.5	10
Ft. Smith, Ark.	8.5	5.75	*7	6.5
Little Rock, Ark.	9.25	6.15	8	8
Texarkana, Ark.	8.5	6.5	*5.5	6
Muskogee, Okla.	8.5	7.5	7	8
Oklahoma City, Okla.	8	7.5	7	8
Tulsa, Okla.	8	7.5	7	8

*Taxes: In gasoline tax column are included these city taxes—Albuquerque, & Roswell, 0.5c; Santa Fe, 1c. Texas 4c state tax applies within city limits of Texarkana, Ark.; Okla. 5.5c state tax applies within city limits of Ft. Smith, Ark.
†To consumers & dealers.
Discounts: To dealers only—Cheyenne 1.5c on Bronz-z-z & Demand.

S. O. California

Standard Gasoline (*Regular Grade*)
Flight Gasoline (*Third Grade*)

	Standard Posted Net Tank Truck	Standard Posted Re-tail	Flight Posted Net Tank Truck	Flight Posted Re-tail	Gaso-line Taxes
San Francisco, Cal.	10	14	9	12	4.5
Los Angeles, Cal.	9.5	13.5	8.5	11.5	4.5
Fresno, Cal.	11	15	10	13	4.5
Phoenix, Ariz.	12	16	10	13	6.5
Reno, Nev.	12	16	11	14	5.5
Portland, Ore.	10.5	14.5	9.5	12.5	6.5
Seattle, Wash.	10.5	14.5	9.5	12.5	6.5
Spokane, Wash.	12.5	16.5	11.5	14.5	6.5
Tacoma, Wash.	10.5	14.5	9.5	12.5	6.5

	Std. Aviation 73 Posted Net Tank Truck	Gasoline Taxes	Kerosine Tank Truck
San Francisco, Cal.	12.5	4.5	11.5
Los Angeles, Cal.	12	4.5	10
Fresno, Cal.	13.5	4.5	12.5
Phoenix, Ariz.	14.5	6.5	12.5
Reno, Nev.	14.5	5.5	13.5
Portland, Ore.	13	6.5	13.5
Seattle, Wash.	13	6.5	13.5
Spokane, Wash.	16	6.5	16.5
Tacoma, Wash.	13	6.5	13.5

Discounts:
To Resale & Commercial Consumers, tank car deliveries 0.25c off posted net tank truck price. Deliveries less than 40 gallons to commercial consumer trade, 4c above posted net tank truck price for Standard and Standard Aviation, 3c above for Flight, except single deliveries to Marine trade only which are billed at posted net tank truck price.

Kerosine—Tank car and truck & trailer deliveries, 3c off posted tank truck price; plant stem deliveries to jobbers, 2.5c off posted tank truck price.

Canada

PRICES OF IMPERIAL OIL, LTD.
Per Imperial Gallon, which is 1.2 U. S. Gallons
3-Star Imperial Gasoline (*Regular Grade*)

	†Gasoline T.W.	*Gasoline Taxes	†Kero-sine T.W.
Hamilton, Ont.	17.5	11	18
Toronto, Ont.	17.5	11	18
Brandon, Man.	21	10	23
Winnipeg, Man.	20.5	10	22.5
Regina, Sask.	18	10	20
Saskatoon, Sask.	20.8	10	22.8
Edmonton, Alta.	18.9	10	20.9
Calgary, Alta.	16	10	18
Vancouver, B. C.	15	10	24
Montreal, Que.	17	11	17.5
St. John, N. B.	16.5	13	19
Halifax, N. S.	16.5	13	19

*Includes 3c Federal, and Provincial taxes.
†To divided & undivided dealers.

Tank Wagon Price Changes

(These changes have been made in price tables)

S. O. Louisiana—Esso Gasoline:

Memphis t. w. & dealer cut 1c Oct. 16.

Above prices include these inspection fees on both gasoline and kerosine unless otherwise specified, per gallon:
Alabama 1/40c on gasoline, 1/2c on kerosine; Arkansas 1/20c; Florida 1/8c; Illinois 3/100c: Indiana 1/5c in lots of 25 bbls. or less, 2/25c in lots of more than 25 bbls.; Kansas 1/50c; Louisiana 1/32c; Minnesota 7/200c; Missouri 1/50c; Nebraska 3/100c; Nevada, gasoline 1/20c; North Carolina 1/4c; North Dakota 1/20c; Oklahoma 2/25c; South Carolina 1/8c; South Dakota 1/20c; Tennessee 2/5c; and Wisconsin 3/100c.
Kerosine inspection fees only: Iowa 3/50c; Michigan 1/5c per gal.

SEABOARD PRICES EXPORT AND COASTWISE

(NOTE—Parenthetical figures after prices indicate number of companies quoting when less than three companies are quoting.)

NOTICE—Owing to great demand, refiners generally limit quotations to regular customers and refuse bids, though higher, from others. Refiners' prices and sales shown; bids reported in market leads

Atlantic Coast

(Prices are of refiners, FOB their refineries & their tanker terminals, & of tanker terminal operators, FOB their terminals)—Prices Effective Oct. 27

MOTOR GASOLINE

District:	Min. 80 Oct. '39 Research (Max. 2 cc. Lead)	72-74 Oct. (ASTM)	68-70 Oct (ASTM)
N. Y. Harb.	8.5 - 9	8 - 8.5	8 (1)
N. Y. Harb., barges	8.5	7.9 - 8.5	7.9 (1)
Albany	8.1 - 8.8	....	....
Philadelphia	8 - 8.7	8 - 8.25	8 -8.2 (1)
Baltimore	7.75 - 8.5	7.75-8.25 (2)	....
Norfolk	7.5 - 8.5	7.5 -8.25 (2)	7.25 -7.5 (2)
Wilmington, N. C.	7.5 - 8	7.5 (1)	7.25-7.5 (2)
Charleston	7.6 - 7.8	7.5 (1)	6.9 -7.1 (1)
Savannah	7.37 - 7.7	....	7.1 -7.3 (2)
Jacksonville	7.37 - 7.7	7.875 (1)	7.1 -7.3 (2)
Miami	7.37-7.7 (2)	....	7.1 -7.3 (1)
Tampa	7.37 - 7.7	....	7.1 -7.3 (1)
Pensacola	7 -7.2 (1)	....	6.6 -6.8 (1)
Mobile	6.87 - 7.2	....	6.6 -6.8 (1)
New Orleans	6.75 - 7.37	6.25-6.875	....
Portland	8.3 - 9.4	8.6 (1)	....
Boston	8.2 - 9	8.5 (2)	8.5 (1)
Providence	8.2 - 9.1	8.5 (1)	....

FUEL OILS

	KEROSINE and/or NO. 1 FUEL	No. 2	No. 3	No. 5	No. 6
N. Y. Harb.	5.3 - 5.75	5.2 - 5.5	5.2	$1.65-1.75 (2&a)	$1.35 -$1.50
N. Y. Harb., barges	5.2 - 5.75	5.1 - 5.5	5.1	....	....
Albany	5.5	5.3	5.3	$1.95 (1)	$1.55 (1)
Philadelphia	5.4 - 5.8	5.2 - 5.25	5.2 - 5.25	$1.68	$1.35 -$1.50
Baltimore	5.4 - 5.45	5.2 - 5.25	5.2 - 5.25	$1.68 (1)	$1.35
Norfolk	5.3 - 5.5	5.2 - 5.25	5.2 -5.25 (2)	....	$1.35 (2)
Wilmington, N. C.	5.25 - 5.5	5.2 - 5.25	....	....	....
Charleston	5.4 - 5.5	5.2 (2)	....	....	$1.30 (2)
Savannah	5.25 - 5.5	....	....	....	$1.30 (1)
Jacksonville	5 - 5.5	5 (1)	5 (1)	....	$1.30 (1)
Miami	5.25-5.5 (2)	....	....	....	....
Tampa	5.25 - 5.5	5 (1)	....	....	$1.25 (1)
Pensacola	4.8 - 5 (1)	....	....	....	....
Mobile	4.75 - 5	....	....	....	....
New Orleans	4.25 - 4.625	3.875- 4 (2)	....	$1.68 (1)	$0.85 (2)
Portland	5.5	5.3	5.3 (2)	$1.95 (1)	$1.35 -$1.55
Boston	5.4	5.2	5.2 (2)	$1.65 (2)	$1.35
Providence	5.4	5.2	5.2	$1.60 -$1.65	$1.35

(a) This price is for a straight-run, low pour test No. 5 fuel.

	Bunker C Fuel Ships' bunkers (Ex Lighterage)	Diesel Oil Ships' bunkers (Ex Lighterage)	Diesel Oil Shore Plants	Gas House Gas Oil 28-34 Gravity
N. Y. Harbor	$1.35 -$1.50	$2.15	5.2 -5.3 (2)	5.3 (2)
Albany	$1.55 (1)	$2.35 (1)	5.3 (2)	5.5 (1)
Philadelphia	$1.35 -$1.50	$2.15	....	....
Baltimore	$1.35	$2.15	5.2 (1)	5.2 (1)
Norfolk	$1.35	$2.15	5.2 (1)	5.2 (1)
Charleston	$1.30	$2.15 (2)	5.2 (1)	5.2 (1)
Savannah	$1.30 (1)	$1.99 (1)	....	....
Jacksonville	$1.30 (2)	$1.99-$1.995 (2)	....	....
Tampa	$1.25 (2)	$1.99-$1.995 (2)	....	....
New Orleans	$0.85	$1.65 (2)	4 (1)	4 (1)
Portland	$1.35 -$1.55	$2.23 -$2.25	5.3 (1)	5.4 (1)
Boston	$1.35	$2.15 -$2.18	5.2 (2)	5.3 (2)
Providence	$1.35	$2.15 -$2.18	5.2 (1)	5.3 (1)

Wax

(Melting points are AMP, 3° higher than EMP. Export prices FAS c.l. Domestic prices FOB, in bags, c.l. Scale solid; fully refined slabs.)

Prices Effective Oct. 27

Crude Scale:	New Orleans Export	N. Y. Domestic	N. Y. Export
124-6 Yellow	6-6.25 (1)	....	6-6.25 (1)
122-4 White	....	6.1-6.25	6-6.25
124-6 White	6-6.5 (2)	6.1-6.25	6-6.25
Fully Refined:			
123-5	6.25 (1)	5.6-6.45(2&a)	6.25 (1)
125-7	6.25 (1)	5.6-6.6(2&a)	6.25 (2)
128-30	6.5 (1)	5.6-7	6.5 (2)
130-32	6.75 (1)	5.85-7.25 (2)	6.5-6.75 (2)
133-5	7 (1)	6.15-7.55	7 (2)
135-7	7.25 (1)	6.4 (1)	7-7.25 (2)

108-11 White Match wax (tight bbls.).....6.5 (1)

(a) 0.4c discount generally given for slabs loose.

Naphtha

Prices Effective Oct. 27

	V.M.&P. Naphtha	Mineral Spirits
Baltimore	10-10.5 (2)	9 - 9.5
New York Harbor	10.5 (2)	9.5
Philadelphia district	10.5 (2)	9.5
Boston	11 (2)	10
Providence	11 (1)	10 (2)

Pacific Export

(Quotations at seaboard, Los Angeles, cargo lots, except where otherwise noted.)

Prices Effective	Oct. 27	Oct. 20
375 e.p. blend, 70 oct.	6.25 - 6.375	6.375- 6.5
390 e.p. blend, 68 oct.	6 - 6.25	6.25 - 6.375
390 e.p. blend, 66 oct.	6 - 6.25	6 - 6.25
400 e.p. blend, 65 oct. min.	5.75 - 6	5.875- 6.125
U. S. Motor, under 65 octane	5.25 - 5.5	5.625- 5.75
38-40 grav. w.w. kero., 150 fire point	4.5 - 5	4.5 - 5
41-43 grav., w.w. kero.	4.75 - 5	4.75 - 5
44-grav., w.w. kero.	5 - 5.5	5 - 5.5
Diesel fuel, 24 & above	$1.25 -$1.30	$1.25 -$1.30
Diesel fuel, under 24	$1.15 -$1.25	$1.15 -$1.25
30-34 grav. diesel (gas oil) Pac. Spec. 200	$1.25 -$1.35	$1.25 -$1.35
Grade C fuel, Pac. Spec. 400	$0.85 -$0.90	$0.85 -$0.90
In Ship's Bunkers, or deep tank lots:		
Diesel fuel, Pac. Spec. 200	$1.35 -$1.45	$1.35 -$1.45
Grade C fuel, Pac. Spec. 400	$0.85 -$0.90	$0.85 -$0.90
Cased Goods: (Per case)		
375-400 e.p. blend, 65 oct. & above	$1.50 -$1.60	$1.50 -$1.60
400 e.p. blend, under 65 oct.	$1.40 -$1.50	$1.40 -$1.50
U. S. Motor	$1.35 -$1.45	$1.35 -$1.45
40-43 grav. w.w. kero., 150 fire point	$1.30 -$1.40	$1.30 -$1.40
Kero., p.w.	$1.25 -$1.35	$1.25 -$1.35

Tanker Rates

(Approximate last paid rates, cents per bbl.; Gulf-N. Atlantic, not East of N. Y.)

Hvy. Crude & Fuel (10 to 19.9 gravity)	57
Light Crude, (30 grav. or Lighter)	50
Gasoline	50
Kerosine	53
No. 2 Fuel	57

Gulf Coast

(Prices for sales made or firm offers reliably reported for sales pending in cargoes FOB ship at Gulf, for minimum of 20,000 bbls. Prices are by refiners only to other refiners, export agents, or to large tanker terminal operators at the customary trade specifications noted.)

Prices Effective Oct. 27

Domestic

Motor Gasoline

Min. 80 oct. '39 Research, max. 2cc lead	6.75
60-62, Gravity, Max. 400 e.p.	
72-74 oct. leaded (ASTM)	6.25 - 6.375
70 oct. unleaded "	6.25 - 6.625
68 oct. " "	6.25 - 6.5
65 oct. " "	5.75 - 6
60 oct. " "	5.5 - 5.75
41-43 w.w. kerosine	3.875- 4.5
No. 2 fuel	3.75 - 4.25
Gas Oil—Less than ½ of 1% sulfur.	
Below 43 diesel index	4.125- 4.25
43-47 " "	4.125- 4.25
48-52 " "	4.125- 4.25
53-57 " "	4.25 - 4.375
58 & above diesel index	4.375- 4.5
Diesel Oil, ships' bunkers (ex-lighterage)	$1.65 -$1.80
Bunker C, " " "	$0.85 -$0.95
Bunker C, cargoes	$0.85 -$0.96

Export

Motor Gasoline

60-62 Gravity, Max. 400 e.p.	
72-74 oct. leaded (ASTM)	6.25 - 6.375
70 oct. unleaded "	6.25 - 6.625
68 oct. " "	6.25 - 6.5
65 oct. " "	5.75 - 6
60 oct. " "	5.5 - 5.75
41-43 w.w. kerosine	3.875- 4.5
Gas Oil—Less than ½ of 1% sulfur.	
Below 43 diesel index	4.125- 4.25
43-47 " "	4.125- 4.25
48-52 " "	4.125- 4.25
53-57 " "	4.25 - 4.375
58 & above diesel index	4.375- 4.5

MID-CONTINENT LUBES

(At Gulf; in packages, FAS.; in bulk, FOB terminals)

Oct. 27

	New Steel Drums	Bulk
200 vis. D 210 brt. stock	34-35 (2)	28.8 (2)
150 vis. D 210 brt. stock 0-10 p.p.	30-31 (2)	24.8 (2)
10-25 p.p.	29.5 (1)	24.3 (1)
100 vis. D 210 brt. stock 0-10 p.p.	29.5 (1)	24.3 (1)
10-25 p.p.	29 (1)	23.8 (1)
200 vis. No. 3 col. neutral: 0-10 p.p.	22 (1)	16.8 (1)

SOUTH TEXAS LUBES

(Vis. at 100°, c. t. 0, blk. exprt. shp., FOB terminals)

Unfiltered Pale Oils: Vis.	Color	Oct. 27	Oct. 20
100	No. 3	6.25-6.5 (2)	6.25-6.5 (2)
200	No. 3	7.75-8.75 (2)	7.75-8.75 (2)
300	No. 3	8.25-9.25 (2)	8.25-9.25 (2)
500	No. 3½	9.25-10.25 (2)	9.25-10.25 (2)
750	No. 4	9.75-11 (2)	9.75-11 (2)
1200	No. 4	10.25-11.5 (2)	10.25-11.5 (2)
2000	No. 4	12.5 (1)	12.5 (1)

Red Oils:

Vis.	Color		
100	No. 5-6	6.5 (1)	6.5 (1)
200	No. 5-6	7.75-8.75 (2)	7.75-8.75 (2)
300	No. 5-6	8.25-9.25 (2)	8.25-9.25 (2)
500	No. 5-6	9.25-10.25 (2)	9.25-10.25 (2)
750	No. 5-6	9.75-11 (2)	9.75-11 (2)
1200	No. 5-6	10.25-11.5 (2)	10.25-11.5 (2)
2000	No. 5-6	11-12.5 (2)	11-12.5 (2)

CRUDE OIL PRICES

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates shown.

EASTERN & CENTRAL STATES FIELDS

PENNSYLVANIA GRADE

Posted by Jos. Seep Purch. Agency (Aug. 23, '41)
Bradford-Allegany $2.75
Southwest Penna $2.40
Eureka (West Va.) $2.34
Corning, O. (May 27, '41) $1.31

Posted by The Pennzoil Co. (Aug. 23, '41)
National Transit $2.68*

Posted by Valvoline Pipe Lines (Aug. 23, '41)
Bradford (Elk & McKean Counties, Pa.) $2.75
Warren, Forest, Venango, Clarion & Butler Counties, Pa. $2.68
Alleghany, Beaver, Washington & Greene Counties, Pa. $2.40
West Virginia $2.34
Southeastern Ohio $2.30

*Applies to Cochran, Franklin, Hamilton & Doolittle districts; prices in other lower districts range down to $2.63 per bbl. at well.

MICHIGAN

Posted by Pure Oil Co. (May 27, '41)
Midland, Midland County $1.44
Sherman $1.39

Posted by Simrall Corp. (May 27, '41)
Greendale, Porter, Vernon, Crystal & Wise $1.44
Buckeye, Bentley, Edenville, Beaverton & Monitor (sweet crude type) $1.42
Freeman, Redding, Lincoln & Winterfield $1.39
West Branch-Arenac $1.24
Hamilton-Grout $1.29

Posted by Sohio Corp. (Mich. Div.)
Traverse crude in Allegan, Kent, Ottawa & Van Buren Cos. (June 2, '41) $1.45
Trenton crude, Monroe Co. (June 2, '41) $1.39

Posted by Bay Pipe Line Corp. (May 27, '41)
Saginaw & Wise $1.44
Buckeye, Bentley & Kawkawlin $1.42
Clare $1.11
Adams (June 1, '41) $1.27

ILLINOIS-INDIANA-KENTUCKY-OHIO

Posted by Sohio Corp. (May 21, '41)
Illinois Basin, including Griffin pool $1.37
Carmi Storms, Ill. area $1.32
Birk City, Ky. area $1.32
Corydon, Ky. area, Henderson $1.32

Posted by Ohio Oil Co. (May 21, '41)
Illinois Basin $1.37
Eastern Ill. & Western Ind. 1.22

Posted by Carter Oil Co. (May 21, '41)
Louden, Fayette Co. Ill. $1.37

Posted by Mohawk Oil Lines, Inc. (May 21, '41)
Southern Illinois $1.37

Posted by Ashland Oil & Transp. Co.
Somerset oil in Ash. Lines, Ky.; (June 19, '41)
Big Sandy River $1.38
Kentucky River $1.43

Posted by Owensboro-Ashland Co.
Owensboro, Ky. area (May 21, '41) $1.32

Posted by S. O. Ohio (Sept. 1, '41)
Lima, O. $1.25
Cleveland, Lodi & Chatham (O.) areas $1.30

MID-CONTINENT

OKLAHOMA-KANSAS-NORTH TEXAS

(See below for companies posting and dates)

Gravity	Schedule No. 1	Schedule No. 2	Schedule No. 3	Schedule No. 4
Below 21	$0.85	$0.75	$0.70	$0.78
21-21.9	.87	.78	.73	.80
22-22.9	.89	.81	.76	.82
23-23.9	.91	.84	.79	.84
24-24.9	.93	.87	.82	.86
25-25.9	.95	.90	.85	.88
26-26.9	.97	.93	.88	.90
27-27.9	.99	.96	.91	.92
28-28.9	1.01	.99	.94	.94
29-29.9	1.03	1.02	.97	.96
30-30.9	1.05	1.05	1.00	.98
31-31.9	1.07	1.07	1.02	1.00
32-32.9	1.09	1.09	1.04	1.02
33-33.9	1.11	1.11	1.06	1.04
34-34.9	1.13	1.13	1.08	1.06
35-35.9	1.15	1.15	1.10	1.08
36-36.9	1.17	1.17	1.12	1.10
37-37.9	1.19	1.19	1.14	1.12
38-38.9	1.21	1.21	1.16	1.14
39-39.9	1.23	1.23	1.18	1.16
40 & above	1.25	1.25	1.20	1.18

Above schedules posted by:

No. 1: **S. O. Indiana** May 20, '41 in Okla. & Kans. **Sinclair-Prairie** May 20, '41 in Okla. & Kans. beginning with 25-25.9. **Continental** May 19, '41 in Okla. & Kans. beginning with Below 29 at $1.01. **Texaco** May 19, '41 in Okla. & Kans. beginning with 28-28.9 at $1.01.

No. 2: **Carter** May 20, '41 in Okla. **Shell** May 19, '41 in Okla. & Kans. (exclusive of Carter Co., Okla.) **Magnolia** May 21, '41 in Okla.

No. 3: **Shell** May 19, '41 in Carter Co., Okla.

No. 4: **Stanolind** May 20, '41 in N. Texas. **Magnolia** May 21, '41 in N. & N. Central Texas. **Sinclair-Prairie** May 21, '41 in N. Central Texas. **Continental** May 21, '41 in N. Texas. **Texaco** May 21, '41 in N. & N. Central Texas. **Magnolia, Sinclair-Prairie & Continental** schedules begin with Below 29 at $0.94. **Texaco** schedule begins with 28-28.9 at $0.94.

TEXAS & NEW MEXICO FIELDS

Posted by Humble Oil & Refining Co.

(May 21, '41, except Panhandle, Tex. July 9, '41)

Gravity	Refugio	Texas Gulf Coast	Miran-do	Ana-huac	Dick-inson	East Central Texas	West Central Texas	Pan-handle, Texas	W. Texas & New Mex.	Hawkins Texas
Below 20	$1.08	$1.06	$1.03	$0.98	$0.93	....	....	$0.73	$0.70	$0.80
20-20.9	1.10	1.08	1.05	1.00	.95	....	....	.75	.72	.82
21-21.9	1.12	1.10	1.07	1.02	.97	....	....	.77	.74	.84
22-22.9	1.14	1.12	1.09	1.04	.99	....	....	.79	.76	.86
23-23.9	1.16	1.14	1.11	1.06	1.01	....	....	.81	.78	.88
24-24.9	1.18	1.16	1.13	1.08	1.03	....	....	.83	.80	.90
25 & above	....	....	....	....	....	....	....	....	....	.92
25-25.9	1.20	1.18	1.15	1.10	1.05	$0.97	$0.88	.85	.82	....
26-26.9	1.22	1.20	1.17	1.12	1.07	.99	.90	.87	.84	....
27-27.9	1.24	1.22	1.19	1.14	1.09	1.01	.92	.89	.86	....
28-28.9	1.26	1.24	1.21	1.16	1.11	1.03	.94	.91	.88	....
29-29.9	1.28	1.26	1.23	1.18	1.13	1.05	.96	.93	.90	....
30-30.9	1.30	1.28	1.25	1.20	1.15	1.07	.98	.95	.92	....
31-31.9	1.32	1.30	1.27	1.22	1.17	1.09	1.00	.97	.94	....
32-32.9	1.34	1.32	1.29	1.24	1.19	1.11	1.02	.99	.96	....
33-33.9	1.36	1.34	1.31	1.26	1.21	1.13	1.04	1.01	.98	....
34-34.9	1.38	1.36	1.33	1.28	1.23	1.15	1.06	1.03	1.00	....
35-35.9	1.40	1.38	1.35	1.30	1.25	1.17	1.08	1.05	1.02	....
36-36.9	1.42	1.40	1.37	1.32	1.27	1.19	1.10	1.07	1.04	....
37-37.9	1.44	1.42	1.39	1.34	1.29	1.21	1.12	1.09	1.06	....
38-38.9	1.46	1.44	1.41	1.36	1.31	1.23	1.14	1.11	1.08	....
39-39.9	1.48	1.46	1.43	1.38	1.33	1.25	1.16	1.15	1.10	....
40 & above	1.50	1.48	1.45	1.40	1.35	1.27	1.18	1.15	1.12	....

Refugio: Includes crude purchased in East White Point, Greta, Melon Creek, O'Connor-McFaddin, Plymouth, Saxet, Taft, & Tom O'Connor fields.

Texas Gulf Coast: Includes crude purchased in Amelia, Clear Lake, Goose Creek, Hastings, Magnet, Mykawa, Mykawa New, Raccoon Bend, South Thompsons, Sugarland, Thompsons, & Webster fields.

Mirando: Includes crude purchased in Blanchard, Bridwell, Colorado, Comitas, Eagle Hill, Escobas, Fitzsimmons, Glen, Government Wells (North & South), Heyser, Hoffman, Kelsey, Kohler, Loma Novia, Lundell, Manila, Mirando Valley, Placedo, Randado, Sarnosa, & Tesoro fields.

Anahuac: Includes crude purchased in Anahuac, Angleton, Cedar Point, Fishers' Reef, Hull (Old & New), Pierce Junction, Red Fish Reef, & Turtle Bay fields.

Dickinson: Includes crude purchased in Dickinson, Gillock, Hardin, League City, & Rowan fields.

East Central Texas: Includes crude purchased in Anderson, Cherokee, Limestone, & Navarro Counties, and Navarro Crossing field.

West Central Texas: Includes crude purchased in Brown, Callahan, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, & Throckmorton Counties.

Panhandle, Texas: Includes crude purchased in Carson, Gray, Hutchinson & Wheeler Counties.

West Texas & New Mexico: Includes crude purchased in Andrews, Crane, Crockett, Ector, Gaines, Glasscock, Howard, Reagan, Upton, Winkler, & Yoakum Counties, Texas; Lea County, N. M.

Hawkins: Includes crude purchased in Hawkins Field, Wood County, Texas.

Conroe $1.43
Tomball 1.40
Van 1.08
Talco 0.79
East Texas & Flag Lake $1.25
Flour Bluff, E. Flour Bluff 1.33
Salt Flat, N. Salt Flat 1.14
Darst Creek, Hilbig, Carroll 1.14
Clark, Zoboroski $1.14
Alice, Benavides (N. Sweden), Sun 1.35
Ben Bolt, Clark-Muil, Tom Graham 1.35
Yates (Pecos) 0.95
La Rosa 1.33

MAGNOLIA PETROLEUM CO.

(May 21, '41)

Panhandle, Tex.—(July 9, '41)—Same as Humble except Magnolia begins with Below 29 at $0.91.

West Texas—In Crane, Upton, Howard, Glasscock, Mitchell, Winkler, Cochran, Hockley, Yoakum & Gaines Cos.—Same as Humble except Magnolia begins with Below 25 at $0.80.

N. Mexico—In Lea Co.—Same as Humble except Magnolia begins with Below 25 at $0.80 & ends with 36 & above at $1.04.

Cass & Panola Cos., Tex.—Below 25 at $0.88, plus 2c per degree of gravity to 40 & above at $1.20.

Mirando, Tex.—Same as Humble.

East Texas $1.25
Darst Creek 1.14
Luling 1.05
Talco ..... .79
Lytton Springs $1.17
Cleveland-Liberty Co. 1.26
Tomball 1.40

SINCLAIR-PRAIRIE OIL MARKETING CO.

Texas Panhandle—(May 23, '41)—Same as Humble except Sinclair-Prairie begins with Below 25 at $0.83.

West Texas & New Mexico—(May 30, '41)—Same as Humble except Sinclair-Prairie begins with Below 25 at $0.80.

Texas Gulf Coast—(May 21, '41)—Same as Humble.

Mexia District, Texas—(May 30, '41)—Same as Humble, East Central Texas, except Sinclair-Prairie also posts Below 25 at $0.95.

East Texas—(May 21, '41) $1.25
Long Lake, Texas—(May 21, '41) 1.23

STANOLIND OIL PURCHASING CO

(May 21, '41)

Clinton, Tex.—Same as Humble Tex. Gulf Coast except Stanolind begins with Below 21 at $1.08.

Fairbanks, N. Houston & Rosslyn, Tex.—Same as Humble Dickinson schedule.

E. Texas $1.25
Satsuma & Tomball, Tex. $1.40

STANOLIND OIL & GAS CO.

(May 21, '41)

W. Beaumont & Spindletop (Jefferson Co., Tex.) **& High Island** (Galveston Co., Tex.)—Same as Humble Tex. Gulf Coast.

Hendrick & Henderson (Winkler Co., Tex.)—Same as Humble Panhandle except Stanolind begins with Below 26 at $0.82.

THE TEXAS CO.

(May 21, '41)

Panhandle, Tex.—Same as Humble except Texaco begins with 34-34.9 at $1.03.

W. Texas & Lea Co., N. M.—Same as Humbe except Texaco posts $0.78 for 23.9 & below and ends with 36 & above at $1.04.

Texas Gulf Coast—Same as Humble except Texaco ends with 34 & above at $1.36.

Duval, Mirando, Tex.—Same as Humble Mirando except Texaco ends with 28-28.9 at $1.21.

Refugio, Tex.—Same as Humble except Texaco ends with 28-28.9 at $1.26.

East Texas $1.25
Darst Creek, Tex. 1.14
Cass Co., Tex. $1.20
Conroe, Tex. 1.43
Hockley & Cochran Cos., Tex. ..... .87

SHELL OIL CO., INC.

(May 20, '41)

West Texas & Lea Co., N. M.—Same as Humble except Shell ends with 36 & above at $1.04.

Fisher Co., Tex.—Same as Humble W. Central Texas except Shell begins with Below 25 at $0.86.

East Texas $1.25
Livingston field, Polk Co., Tex. 1.25
Pecos Co., Tex., except Yates Shallow pool $0.95
Pecos Co., Yates Shallow pool ..... .82

CONTINENTAL OIL CO.

Carson & Hutchinson Cos., Tex.—(July 9, '41)—Same as Humble Panhandle except Continental begins with Below 29 at $0.91.

Mirando, Tex.—(July 1, '41)—Same as Humble.

Wade City & Clara Driscoll, Tex.—(July 1, '41)—Same as Humble Refugio.

Alfred & Magnolia City, Tex.—(May 21, '41), $1.35.

Eddy Co., N. M.—(May 30, '41)—Same as Humble N. M. schedule except Continental begins with Below 29 at $0.88.

PAN AMERICAN PRODUCTION CO.

(May 21, '41)

Hastings & S. Houston, Tex.—Same as Humble Tex. Gulf Coast except Pan Am. begins with Below 21 at $1.08.

Gillock, Tex.—Same as Humble Dickinson except Pan Am. begins with Below 21 at $0.95.

East Texas $1.25
Cayuga, Tex. ..... .90

CRUDE OIL PRICES

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates shown.

CALIFORNIA

Posted by S. O. California, May 23, 1941

(All gravities above those quoted take highest price offered in that field)

Gravity	Signal Hill (Long Beach)	Wilmington	El Segundo	Seal Beach	Huntington Beach	Inglewood	Olinda Brea Canon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley, Canal, Wasco	Coles Levee	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Gravity
14-14.9	....	$0.68	....	....	$0.71	....	$0.70	....	$0.70	$0.70	$0.70	$0.72	....	....	....	....	....	$0.73	$0.73	$0.73	14-14.9
15-15.9	....	.71	....	....	.75	$0.76	.72	....	.72	.71	.72	.72	....	....	....	....	....	.73	.73	.73	15-15.9
16-16.9	....	.74	$0.79	....	.79	.79	.75	....	.74	.73	.75	.72	....	....	....	....	....	.73	.75	.73	16-16.9
17-17.9	....	.78	.82	....	.82	.82	.78	....	.77	.76	.78	.72	....	....	....	....	....	.75	.78	.73	17-17.9
18-18.9	$0.80	.82	.86	....	.86	.85	.81	....	.80	.79	.82	.74	....	....	....	....	....	.78	.81	.73	18-18.9
19-19.9	.84	.86	.90	....	.89	.88	.85	....	.83	.82	.85	.77	....	....	....	....	$0.73	.81	.84	.75	19-19.9
20-20.9	.88	.90	.94	....	.93	.92	.88	....	.86	.85	.89	.80	....	....	....	....	.76	.85	.87	.77	20-20.9
21-21.9	.92	.94	.98	....	.96	.95	.91	....	.89	.89	.92	.84	....	....	....	....	.79	.90	.90	.80	21-21.9
22-22.9	.96	.98	1.02	$0.88	.99	.98	.95	....	.93	.93	.96	.87	....	....	....	....	.83	.94	.93	.83	22-22.9
23-23.9	1.00	1.02	1.05	.92	1.02	1.01	.98	....	.97	.98	1.00	.91	....	....	....	....	.87	.99	.96	.86	23-23.9
24-24.9	1.03	1.06	1.07	.97	1.05	1.04	1.01	....	1.01	1.02	1.03	.94	$0.99	....	....	....	.90	1.03	.99	.89	24-24.9
25-25.9	1.07	1.09	1.10	1.01	1.08	1.07	1.04	....	1.05	1.06	1.07	.98	1.02	....	....	....	.94	1.07	1.01	.92	25-25.9
26-26.9	1.11	1.12	1.12	1.06	1.11	1.10	1.08	....	1.09	1.10	1.11	1.01	1.06	....	....	....	.97	1.11	1.04	.95	26-26.9
27-27.9	1.15	1.15	1.15	1.10	1.14	1.14	1.11	....	1.13	....	1.15	1.05	1.10	$1.04	....	....	1.01	1.15	1.07	.98	27-27.9
28-28.9	1.18	1.18	1.17	1.15	1.17	1.17	1.14	....	1.17	....	....	1.08	1.13	1.08	....	....	1.04	1.19	1.10	1.00	28-28.9
29-29.9	1.20	1.21	....	1.19	1.20	1.20	....	$1.17	....	....	....	1.12	1.17	1.12	....	....	1.07	1.24	1.13	1.02	29-29.9
30-30.9	1.23	1.24	....	....	1.23	1.22	....	1.21	....	Elwood	....	1.15	1.21	1.15	$1.01	$1.09	1.10	1.28	1.16	1.04	30-30.9
31-31.9	....	....	....	....	....	1.24	....	1.25	....	Terrace	....	1.19	1.24	1.19	1.04	1.12	1.14	....	....	1.06	31-31.9
32-32.9	....	....	....	....	....	....	....	1.29	....	F.o.b. Ship	....	1.23	1.28	1.23	1.07	1.14	1.17	....	....	1.09	32-32.9
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.22	....	1.27	....	1.26	1.10	1.17	....	....	....	1.11	33-33.9
34-34.9	Kettleman Hills		....	....	....	....	....	1.36	....	1.25	....	1.31	....	1.30	1.13	1.20	....	....	....	1.13	34-34.9
35-35.9	....	$1.23	....	....	....	....	....	....	....	1.28	....	1.35	....	....	1.16	1.22	....	....	....	....	35-35.9
36-36.9	....	1.26	....	....	....	....	....	....	....	....	....	1.39	....	....	1.19	1.25	....	....	....	....	36-36.9
37-37.9	....	1.29	....	....	....	....	....	....	....	....	....	1.43	....	....	1.22	....	....	....	....	....	37-37.9
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.47	....	....	1.25	....	....	....	....	....	38-38.9
39-39.9	....	....	....	....	....	....	....	....	....	....	....	1.51	....	....	....	....	....	....	....	....	39-39.9
40-40.9	....	....	....	....	....	....	....	....	....	....	....	1.53	....	....	....	....	....	....	....	....	40-40.9

Playa Del Rey: (FOB Standard Pipe Line) 20-20.9, $0.80; 21-21.9, $0.84; 22-22.9, $0.87.
Wheeler Ridge: 22-22.9, $0.76; 23-23.9, $0.80; 24-24.9, $0.83.
Newhall, Kern River, Kern Front, McKittrick & Round Mountain: 14-14.9 $0.73.

LOUISIANA-ARKANSAS

Posted by S. O. Louisiana, May 22, '41

Gravity	Atlanta, Ark. et al.	De Soto, La. et al.	Rodessa, La. et al.	Bunkie, La. et al.	Darrow, La. et al.	University, La. (Baton Rouge)
40 & above	$1.08	$1.18	$1.20	$1.30	$1.30	....
39-39.9	1.06	1.16	1.18	1.28	1.28	....
38-38.9	1.04	1.14	1.16	1.26	1.26	....
37-37.9	1.02	1.12	1.14	1.24	1.24	....
36-36.9	1.00	1.10	1.12	1.22	1.22	....
35-35.9	.98	1.08	1.10	1.20	1.20	....
35 & above	....	....	....	....	....	$1.36
34-34.9	.96	1.06	1.08	1.18	1.18	1.34
33-33.9	.94	1.04	1.06	1.16	1.16	1.32
32-32.9	.92	1.02	1.04	1.14	1.14	1.30
31-31.9	.90	1.00	1.02	1.12	1.12	1.28
30 & below	....	....	....	....	....	1.26
30-30.9	.88	.98	1.00	1.10	1.10	....
29-29.9	.86	.96	.98	1.08	1.08	....
28-28.9	.84	.94	.96	1.06	1.06	....
27-27.9	.82	.92	.94	1.04	1.04	....
26-26.9	.80	.90	.92	1.02	1.02	....
25-25.9	.78	.88	.90	1.00	1.00	....
Below 25	....	.86	.88	.98	....	....
24-24.9	.76	....	.88	....	.98	....
23-23.9	.74	....	.86	....	.96	....
22-22.9	.72	....	.84	....	.94	....
21-21.9	.70	....	.82	....	.92	....
Below 21	.68	....	.80	....	.90	....

Atlanta schedule includes Buckner, Lewisville, Magnolia, Village & Schuler (Jones Sand), Ark.

De Soto schedule includes Sabine, Fouke, Homer, Miller Co., Nebo & Sugar Creek.

Rodessa schedule includes Cotton Valley & Shreveport (Cross Lake) ending with Below 25 at $0.88; Anse La Butte (Aug. 1, '41); Caddo (Oct. 15, 1941).

Bunkie schedule includes Eola, Olla, & South Olla.

Darrow schedule includes Bayou Mallet, Choctaw, Jeanerette, Lirette, N. & S. Crowley, Port Allen, Port Barre, Potash, Roanoke, & St. Martinville.

Big Creek, Dorcheat, McKamie Distillates (Sour) $1.15
Heavy Smackover Crude ..... .83
Cotton Valley Distillate (Sept. 1, '41) 1.40
Cotton Valley (Holloway Sand Crude) 1.25
Lisbon Distillate 1.20

(Continued next column)

LOUISIANA-ARKANSAS (Cont'd)

Posted by Shell Oil Co., Inc. (May 20, '41)

Gravity	Iowa	Roanoke	Gibson
Below 20	$0.99	$0.94	$0.89
20-20.9	1.01	.96	.91
21-21.9	1.03	.98	.93
22-22.9	1.05	1.00	.95
23-23.9	1.07	1.02	.97
24-24.9	1.09	1.04	.99
25-25.9	1.11	1.06	1.01
26-26.9	1.13	1.08	1.03
27-27.9	1.15	1.10	1.05
28-28.9	1.17	1.12	1.07
29-29.9	1.19	1.14	1.09
30-30.9	1.21	1.16	1.11
31-31.9	1.23	1.18	1.13
32-32.9	1.25	1.20	1.15
33-33.9	1.27	1.22	1.17
34 & above	1.29	1.24	1.19

Iowa schedule includes Black Bayou & White Castle, La. fields.

Roanoke schedule includes Chalkley, La. field.

Gibson schedule includes S. Houma, Hester & W. Lake Verret, La. fields.

Happytown field, St. Martin Par., La. $1.15

Posted by Arkansas Fuel Oil Corp.

Urania, La. (May 22, '41) $1.15

Posted by Continental Oil Co. (May 21, '41)

Tepetate, La. $1.18
Ville Platte, La. 1.20
Lake Arthur, La. 1.18
Ritchie, La. (Sept. 1, '41) 1.08

Abbeville, La.

Below 36 $1.07	37-37.9 $1.11	39-39.9 $1.15
36-36.9 1.09	38-38.9 1.13	40 & above 1.17

CANADIAN FIELDS

Posted by Imperial Oil Limited

Western Ontario (Nov. 6, 1939)

Petrolia ..... $2.10 Oil Springs $2.17

Turner Valley Crude Oil (July 16, '41)

(Prices FOB producer's tankage)

33-33.9 $1.35	44-44.9 $1.57	55-55.9 $1.79
34-34.9 1.37	45-45.9 1.59	56-56.9 1.81
35-35.9 1.39	46-46.9 1.61	57-57.9 1.83
36-36.9 1.41	47-47.9 1.63	58-58.9 1.85
37-37.9 1.43	48-48.9 1.65	59-59.9 1.87
38-38.9 1.45	49-49.9 1.67	60-60.9 1.89
39-39.9 1.47	50-50.9 1.69	61-61.9 1.91
40-40.9 1.49	51-51.9 1.71	62-62.9 1.93
41-41.9 1.51	52-52.9 1.73	63-63.9 1.95
42-42.9 1.53	53-53.9 1.75	64 & over 1.97
43-43.9 1.55	54-54.9 1.77	

Absorption Gasoline (July 16, '41)

90% Rec., 20 lb. Reid v.p. $2.28
90% Rec. 17 lb. Reid v.p. 2.44

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co. (May 20, '41)

Salt Creek (except Tensleep crude), Midway & Dutton Creek, Wyo.

Below 29 $0.96	32-32.9 $1.04	36-36.9 $1.12
29-29.9 .98	33-33.9 1.06	37-37.9 1.14
30-30.9 1.00	34-34.9 1.08	38-38.9 1.16
31-31.9 1.02	35-35.9 1.10	39-39.9 1.18
		40 & above 1.20

Wyoming:		Wyoming:	
Tensleep Crude	$0.6785	Grass Creek Light	$1.00
Frannie Light	.70	Grass Creek Heavy	.50
Frannie Heavy	.47	Elk Basin	1.00
Hamilton Dome	.45	Iles, Colo	1.07

Posted by Ohio Oil Co. (May 20, '41)

Elk Basin, Wyo. $1.00
Grass Creek, Wyo., Light 1.00
Rock Creek, Wyo. 1.15
Lance Creek, Wyo., (July 1, '41) 1.12

Posted by Continental Oil Co. (May 21, '41)
Ft. Collins & Wellington, Col.

Below 29 $0.96	32-32.9 $1.04	36-36.9 $1.12
29-29.9 .98	33-33.9 1.06	37-37.9 1.14
30-30.9 1.00	34-34.9 1.08	38-38.9 1.16
31-31.9 1.02	35-35.9 1.10	39-39.9 1.18
		40 & above 1.20

Canon City & Florence, Col	$1.05	Big Muddy Wyo., (May 30, '41)	$1.08
Cat Creek, Mont.	1.15	Lance Creek, Wyo., (July 1, '41)	$1.12

Posted by Independent Pipe Line Co. (Aug. 1, '41)

Falls City, Neb., field price $0.90
Falls City, Neb., loaded in tank cars 0.95
Shubert, Neb., loaded in tank cars 0.97

CLASSIFIED

Address all Blind Box Number ads to National Petroleum News, 530 Penton Building, Cleveland, Ohio, unless otherwise specified.

For Sale

Service Station and Bulk Plant in city of five thousand, located in Southern Wisconsin. Ill health reason for selling. Ficken Oils, Burlington, Wis.

Three Fruehauf semi-tank trailers 3000 gallon single compartment capacity. Perfect condition. One year old. Complete with all fittings. Williams Transfer & Storage Company, Decatur, Alabama.

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· PERSONALS ·

Hell, fire and water, so to speak, were what **Ralph K. Davies,** Deputy Petroleum Co-ordinator, went through going and coming from recent Texas Mid-Continent Oil and Gas Assn.'s 22nd annual convention at Beaumont. Few knew about it, save his suffering partner, **J. Elmer Thomas,** special assistant to Mr. Davies. Both men were under a bar one night, so to speak but not from the usual cause. Seems the plane they were on left them 100 miles from Beaumont and they had to drive both ways, spending one night on cots in a Texas cocktail lounge. After speaking to Texas oil men, Messrs. Davies and Thomas started back for Washington. On the 100-mile drive back to catch their plane, someone slammed the car door on one of Mr. Davies' fingers. Arriving at the airport the PCO officials ran into a "shortage" —not of oil—but lower berths. The man in the lower berth beneath Mr. Davies on the plane was up most of the night, repeatedly banging his head on the "ceiling." When one of his PCO colleagues asked "How was the trip Ralph?," Mr. Davies replied "Beautiful." We'll bet.

* * *

Lt. J. C. Radford, formerly with Union Oil Co. of Calif., Los Angeles, is now working under Lt. Commander **W. C. Latrobe** in U. S. Navy Specifications Section, at Washington. When with the Union, Lieutenant Radford worked in technical product sales division.

* * *

Mr. & Mrs. Arnold R. Daum, of Chicago, announce the arrival on Oct. 16 of a 6-lbs., 6-oz. baby girl named Janet Nell. Mr. Daum is secretary of the Motor Fuel Committee of the American Petroleum Institute.

* * *

Paul Hughes, Louisville, Ky., of the Ohio Oil Co., recently had a 5-week battle with a bronchial hemorrhage resulting from a touch of pneumonia. He's just beginning to come in to his Louisville office regularly but will have to "take things easy" for a little while yet.

* * *

Everette L. DeGolyer, Director of Conservation, Petroleum Co-ordinator's Office, returned to Washington Oct. 20 after spending several weeks in Texas and California. While in Los Angeles, he worked on new California production program called for by the Petroleum Co-ordinator (*NPN Oct.* 1, *p.* 16).

* * *

Oil men from El Dorado, Ark., who have recently been in Washington at Petroleum Co-ordinator's Office are **J. J. Allinson,** general manager of Lion Oil Refining Co. and **Inghram Grayson,** also of Lion.

* * *

When **Frank Thompson** set down the wheels of his 5-passenger airplane on Chicago airport, he was just 5 hours and some 900 miles from his home in Anderson, S. C., where he runs the Anderson Petroleum Co., an independent oil jobbing company. Mr. Thompson was in town for the convention of National Oil Marketers Assn. He has been flying his own plane for a number of years, now and then trading it in for a new and larger model.

* * *

W. M. Downing, J. C. Hunter, W. A. Goforth

John D. Rockefeller was known for his dimes and today, **Warwick M. Downing,** Denver producer, is known for his "cartwheels." Like most Coloradoans, this representative to the Interstate Oil Compact Commission disdains one dollar bills and always carries a stack of the weighty and "comparatively rare" coins in his voluminous pockets.

He is shown here exhibiting a new silver dollar, just minted at Denver, to **J. C. Hunter,** center, Abilene, Tex. producer and Compact representative, and to **W. A. Goforth,** Tulsa producer and retiring president of the Oklahoma Stripper Well Assn.

* * *

Herbert Clay, executive secretary of the Kentucky Petroleum Marketers Assn., is back this week at his Brown Hotel office in Louisville following a 2-week vacation.

* * *

VIRGINIA OIL MEN: If You Were at Roanoke Meeting, See If You Can Find Yourself Here

Refining Technology

INCLUDING INTERNATIONAL PETROLEUM TECHNOLOGY

Aviation Gasoline Program Will Affect Requirements for Other Products

By GEORGE B. MURPHY, Technical Editor NPN

WASHINGTON, Oct. 25.—Perhaps the most important problem confronting the oil refining industry today is the building of plants to approximately triple the present output of 100-octane aviation gasoline. This output is now 43,000 bbls. per day and it is to be increased to 120,000 bbls. daily without any curtailment in the rate of producing the other grades of gasoline.

This was the problem taken up at the meeting here Oct. 20 and 21 of the oil industry's subcommittee on aviation gasoline. This committee met with Wright W. Gary, refining director and his staff of the Petroleum Co-ordinator's Office.

A second problem before the industry, and also considered at the meeting here, is how to increase the output of aviation gasoline and, when necessary, which may be shortly, increase the production of motor gasoline, as well as other necessary products of petroleum.

That the 4,000,000 barrels total refining capacity of the country, will not be adequate to meet demands in 1942, is the opinion held by various government officials here. The present plan to immediately supply an additional 20,000 barrels daily of 100-octane aviation gasoline will necessitate an increased output of base stocks, which may seriously reduce the quality and quantity of fractions now finding their way into motor gasoline and lower octane number aviation fuel. To study this problem, it was learned that the government now has 100 men calling upon refiners throughout the country, to determine the additional equipment or revised methods that will be required to meet all demands placed upon them.

This study may call for a revision of the nation's standards for motor gasoline. There has been much speculation here as to how this may be accomplished without seriously interfering with the motoring public's demands. One method proposed to increase the yield was to again raise the end point from 400° to 437°F. Another was to permit the sale of only one grade of gasoline, rather than the three at present sold at filling stations. Together with a possible reduction in lead allowables, the reduction in the octane number of gasolines to be sold during the war might require automobile engine adjustments to fit the lowered anti-knock value of gasoline.

All refiners are asked to study these problems as to whether or not they are in a position to contribute base stocks or blending agents, or perhaps the finished product for 100-octane aviation gasoline. Specifications and methods of testing for the four grades of aviation fuel, namely of 65, 73, 91 and 100-octane number, and the six grades of aviation lubricating oils, may be obtained from the Bureau of Aeronautics, War Department, Washington.

In general, the specifications for the highest grade aviation fuel consists of a maximum of 3cc of lead, a freezing point of minus 76°F, a maximum copper dish gum content of 5 mg., a sulphur content not to exceed 0.05%, a vapor pressure not to exceed 7 lbs. There is no specification on specific gravity, color—blue, shall be immiscible with water. Its octane number shall be 100 minimum, the accelerated gum test shall not be over 6 mg., the residue shall be neutral, the boiling ranges shall be 10% at 167, 50% at 212, and 90% at 275°F. Its heat of combustion shall not be less than 18,700 BTUs per pound. Some inhibitors are permitted, but they shall not exceed one pound for 5000 gal. This specification supersedes the old army and navy specification AN 9531.

To assist the average refiner in determining what part he may be called on to play in the government's program to triple 100-octane aviation gasoline production, the following information was secured by REFINING TECHNOLOGY from Refining Director Gary.

1. What Program Was Discussed in the Meeting?

The main purpose is to find blending agents and especially fillers or base stocks to meet army and navy needs for a fuel of increased lifting power. Its octane may be 100 or 100 + octane. England's octane requirements are even higher than ours and they use large percentages of aromatics, while in the U. S. aromatic content is limited. The gasoline required generally constitutes:

50% blending agent (88 to 100 o.n.)
40% base stock straight-run (75 o.n.)
10% Isopentane
3cc (max.) tetraethyl lead fluid

The percentages will vary depending on the octane of the blending agents and base stocks.

The aviation gasoline sub-committees are aiming toward:

a. A review of the present national and world wide aviation fuel requirements.
b. Studying future requirements, both war and peace time.
c. Determining plant capacity required to meet all avia-

tion fuel demands.

d. Determining plant capacity necessary to meet the government's war requirements.
e. The proper form of defense contracts between the government and the refiners.

2. Where To Get Information On 100-Octane Fuel?

All requests should be addressed to the Director of Refining, Wright W. Gary, Washington.

3. What Processes Are Available For Making Blending Agents For 100-Octane Gasoline?

a. Sulphuric acid alkylation.
b. Polymerization plus hydrogenation, to make hydrocodimers.
c. Pyrolytic alkylation of ethylene and butane, to make neohexane.
d. Isomerization and dehydrogenation, to make the raw materials for the above.

4. What Processes Are Available For Base Stock?

a. Fractionation of selected crudes for high octane straight run gasoline.
b. Isomerization of pentane and butane.
c. Catalytic cracking.
d. Hydroforming.

5. How Can The Little Refiner Enter The Picture?

There are several ways in which he may co-operate.

a. Make base stocks from selected crudes or natural gas.
b. By selective polymerization of olefinic gases, make isooctenes, an intermediate material for hydrocodimers.
c. Supply isobutane and isopentane, raw materials for alkylate production.
d. Contribute part of the raw materials required for a community aviation gasoline unit.

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October 29, 1941

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6. Will Base Stocks And Blending Agents Be Purchased Separately?

Yes, the method for purchasing is under consideration by the government.

7. What Price Will Be Paid For Each?

No purchase prices have been set since the value will depend upon the octane number quality of the products.

8. What Specifications Have Been Set For Each?

The specifications have been set by the Bureau of Aeronautics of the army and navy and may be obtained by the refiners through application.

9. Where Can Finances Be Obtained For Installation?

Through the Reconstruction Finance Corp., or by application to Director Gary of the Petroleum Co-Ordinator's office. However, at the present time, the government is only looking for sources of at least 1000 barrels per day capacity of base stocks or blending agents.

10. What Companies Are Now Making The 43,000 Barrels Of 100-Octane Aviation Fuel Per Day?

(1) Phillips (2) Shell (3) Sinclair (4) Indiana Standard (5) Ohio Standard (6) Continental (7) Gulf (8) Humble (9) Magnolia (10) Louisiana Standard (11) Texas (12) Richfield (13) California Standard (14) Tidewater Associated (15) Union. (NOTE: no refiners are on the East Coast of the U. S. A.)

11. Who Will Build The New Plants?

The government expects the individual refiner to make his own arrangements with engineering firm or contractor, just as he has done in the past.

12. What Are The Royalties Charged?

The rates considered now are the currently accepted rates of the licensors of the various processes.

13. What Does Government Require Of Refiners in 1942?

The PCO has 100 men in the field now to study the present equipment used in refining the 4,000,000 barrels of crude per day. Some plants are worn out or obsolete; others are being pushed beyond their capacity and often held on stream when they should be shut down for repairs.

The government has been analyzing each area of the U. S. to fit storage capacities into the rate of demand and to meet next year's developments. Expansion is required for 100-octane gasoline as well as aviation lubricants. New plants are needed to produce 80 and 90 octane gasolines. Steel is difficult to obtain, but OPM is working on this and materials of construction should be available.

To release capacity and stocks now used for motor gasoline, the government may raise the end point of ordinary motor fuel and perhaps lower the octane of this product. But, this brings up a question of storage for if the industry stocks up with motor fuel it may have insufficient tankage for aviation gasolines.

The editor was impressed by the keen interest displayed by the refiners at Washington and later along the eastern seaboard in this important contribution to national defense. It was learned that while the eastern refiners are not manufacturing all the components going into 100-octane number gasoline, they distribute large quantities of this product by manufacturing some of these, and obtain the balance from other refiners or subsidiaries. Development companies are actively following this project and it is probable that within a short time new methods for producing blending agents in excess of 90 octane will be commercially available.

Evaluation of Granular Adsorbents For Petroleum Refining

By Ogden FitzSimons,* R. C. Amero** and R. G. Capell**

(Presented before Petroleum Division, American Chemical Society, Atlantic City, Sept. 10-11)

A new procedure for evaluating the decolorizing efficiency of fullers earth and bauxite in treating lubricating oil stocks is described. The method has been used in two independent laboratories for the last 5 years, and is said to be superior to other methods in that it is faster and that it duplicates on a small scale the commercial scale operations in the filter house. Investigation of variable factors have established the error of the test method in determining decolorizing efficiency as less than 3%, it is stated.

Testing procedure is described in detail, as applicable both to a portable testing unit and a large size stationary filter bank in the laboratory. Data is also given from test results on effect of time and temperature of activation on decolorizing efficiency, effect of depth of bed, exposure to air of filtering medium, and other factors.

EVER since the percolation of petroleum products through a bed of granular adsorbent was first accepted as a practical method of removing tars, resins, and similar undesirable constituents, the adsorption capacity, or "decolorizing efficiency," of the adsorbent has assumed considerable importance as a basic factor in the economics and control of filter house operation (9).

No satisfactory relationship has been established between the decolorizing power and the composition of the fullers earth and bauxite type of petroleum adsorbents, and consequently chemical analysis is of no value as a means for quality control (1, 2). The evaluation requires actual percolation procedures on a small scale which duplicate larger operations in the refinery (13). The testing methods and equipment to be described have been in daily use in two independent laboratories for the past five years, and have proven to be superior in speed and accuracy to previously accepted methods (10, 11, 12).

Apparatus and Procedure

As illustrated in Fig. 1, a given quantity of adsorbent that has been screened to the proper mesh size and heat activated under standardized conditions, is charged into a test filter on top of a tamped cotton wad. The filter clay is maintained at any desired temperature by circulating vapors of a liquid with the proper boiling point through the jacket of the filter. This method of vapor heating offers the advantages of high heat transfer and uniform temperature throughout the system without the use of an intricate thermostatic control or a circulating pump. The temperature fluctuates only wih barometric pressure, giving a maximum deviation of about 0.5°F. Fig. 2 shows a bank of laboratory filters attached to a heating manifold of acetone vapor, which utilizes the same principle of operation as the portable testing unit in Fig. 1.

A dropping funnel of standard testing solution which may be straight steam refined stock, unfiltered neutral, or

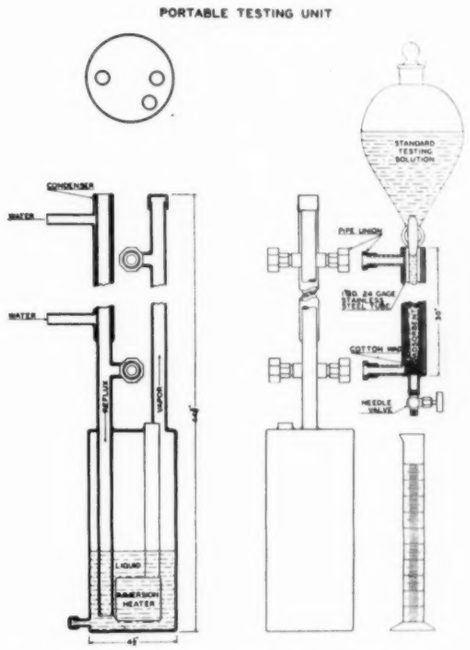


Fig. 1—Portable test unit for determining the petroleum decolorizing efficiency of granular adsorbents

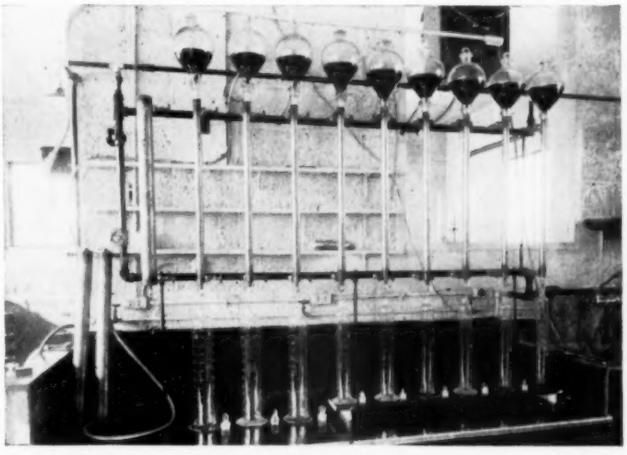


Fig. 2—A bank of laboratory filters attached to a heating manifold of acetone vapor, which utilizes the same principle for determining the petroleum decolorizing efficiency of granular adsorbents as the portable unit shown in Fig. 1

*403 Limekiln Pike, Glenside, Pa.
**Floridin Company.

a solution of steam refined stock and naphtha, and so forth, depending upon the particular test being run, is placed on top of the filter as shown. To simulate the "soaking" operation in a refinery, the needle valve is closed for 10 minutes after the first oil comes through, then the valve is opened to allow percolation to proceed at the desired rate. The true color of the filtered oil is determined periodically and is plotted against the volume yield (see Fig. 3). The efficiency of the adsorbent can then be de-

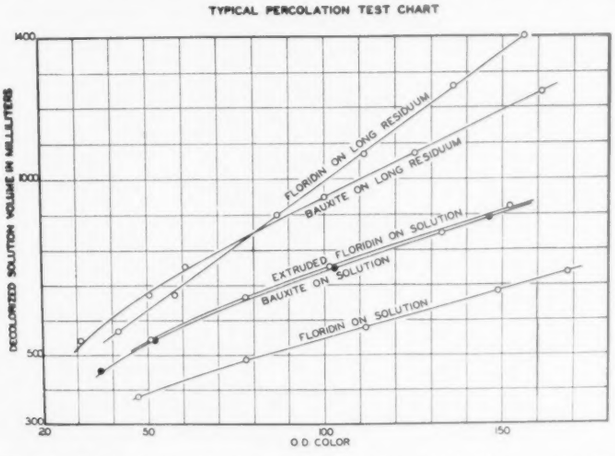


Fig. 3—Typical percolation test chart, in which the true color of the filtered oil is plotted against volume yield

termined as gals. of oil to a specified color per ton of clay, but a more satisfactory expression of efficiency is the ratio of the yields on two adsorbents, as will be explained in the section on Laboratory Standards.

At the conclusion of the test, the filter is disconnected from the heating manifold and dumped by screwing the needle valve into a suitable fitting on a compressed air hose and blowing out the cotton wad with the adsorbent ahead of it. After the filter is rinsed with naphtha, it is ready to be used again. The simplicity of the cleaning procedure is one of the most important advantages of this filter design.

The small portable unit, Fig. 1, weighs only 16 lbs. and, with exception of the top and bottom of the boiler, is made up entirely of cold drawn mechanical seamless steel tubing which can be welded by any of the commercial methods. It can be operated at any point where there is a supply of cooling water and electricity. When filled with acetone, a 500 watt heater is sufficient.

The percolation method of refining petroleum products by adsorption is usually carried out with 16-30, 30-60, or 60-100 mesh classifications. The 30-60 mesh grade is most popular in the industry and for this reason is used for routine laboratory tests.

Frequently the difference in adsorption capacity between samples is entirely due to a difference in particle size distribution within a given mesh classification, rather than to a difference in the efficiency of the adsorbent surfaces.

Results

The effect of particle size on yields is shown in Fig. 4 and 5. The yields obtained are also a function of the rate of percolation. At high rates of percolation, the difference between yields from the fine and coarse fractions is larger than at slow rates of percolation. The capacity of 16-20 mesh cannot be brought up to that of 40-50 mesh by slow rates of percolation, and further, there is no advantage in grinding finer than 40-50 when adsorption proceeds at a slow rate of percolation.

For example, Fig. 5, when treating a 40% solution of 5700 O. D. stock at a rate of 16 gals. per ton per hour, the 40-50 mesh particles yielded 1080 gals. per ton to 5 A. S. T. M. color and the 80-100 mesh particles yielded 1070 gals. per ton to the same color. The same effect was obtained with a 40% solution of a lighter colored, 3200 O. D., stock at a rate of 144 gals. per ton per hour (Fig. 4). At a rate of

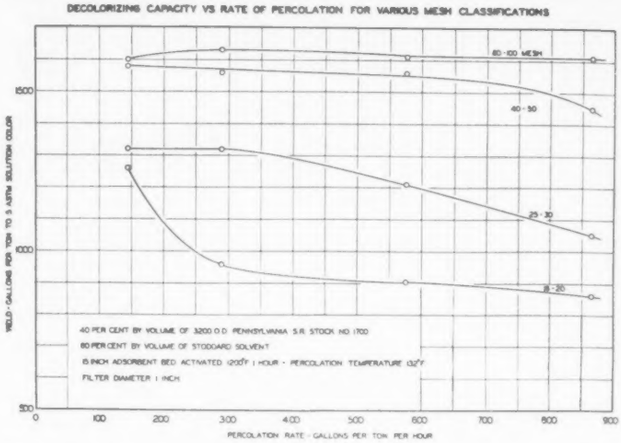

DECOLORIZING CAPACITY VS RATE OF PERCOLATION FOR VARIOUS MESH CLASSIFICATIONS
80-100 MESH
40-50
25-30
16-20
40 PER CENT BY VOLUME OF 3200 O.D. PENNSYLVANIA S.R. STOCK NO 1700
60 PER CENT BY VOLUME OF STODDARD SOLVENT
15 INCH ADSORBENT BED ACTIVATED 1200°F 1 HOUR - PERCOLATION TEMPERATURE 132°F
FILTER DIAMETER 1 INCH
PERCOLATION RATE - GALLONS PER TON PER HOUR

Fig. 4—Decolorizing capacity vs. rate of percolation for various mesh classifications, treating a 40% solution of 3200 O.D. stock

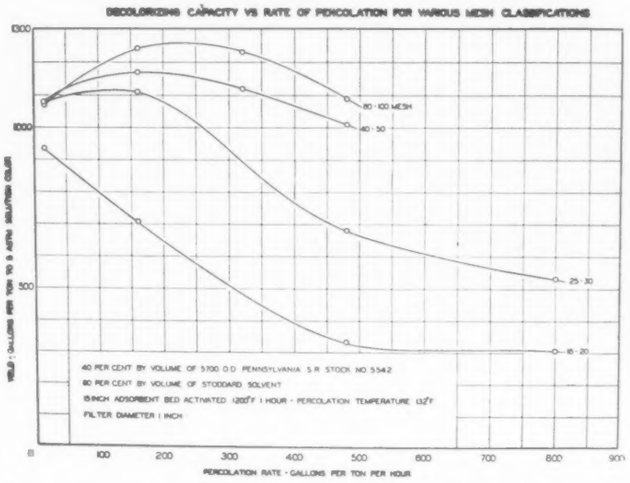

DECOLORIZING CAPACITY VS RATE OF PERCOLATION FOR VARIOUS MESH CLASSIFICATIONS
80-100 MESH
40-50
25-30
16-20
40 PER CENT BY VOLUME OF 5700 O.D. PENNSYLVANIA S.R. STOCK NO 5542
60 PER CENT BY VOLUME OF STODDARD SOLVENT
15 INCH ADSORBENT BED ACTIVATED 1200°F 1 HOUR - PERCOLATION TEMPERATURE 132°F
FILTER DIAMETER 1 INCH
PERCOLATION RATE - GALLONS PER TON PER HOUR

Fig. 5—Decolorizing capacity vs. rate of percolation for various mesh classifications, treating a 40% solution of 5700 O. D. stock

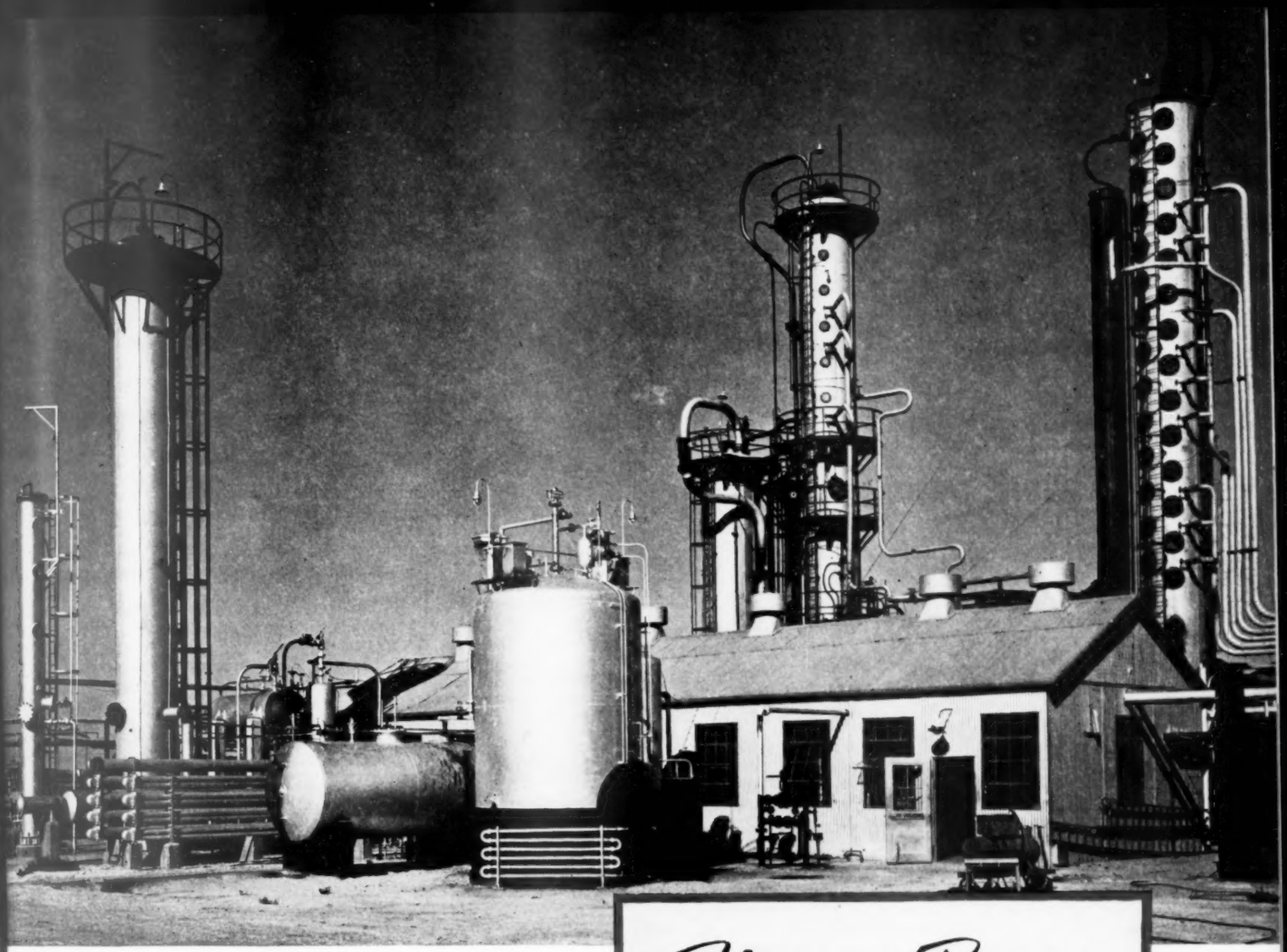
400 gals. per ton per hour, the 80-100 sample maintained the same yield or increased while the 40-50 sample fell off and the 16-20 sample suffered a decline to less than 50% that of the 80-100 yield. To obtain fair comparisons; it is imperative that identical meshes and percolation rates be used.

Absorbent Bed Depth

The depth of bed to use varies with the amount and type of impurity being adsorbed, as well as the degree of dilution, viscosity and other characteristics of the solution. The depth of bed is often times determined too by the color and volumes at which it is necessary to take measurements. For tests on petrolatum, for example, it is necessary to use a bed depth sufficient to yield measurable amounts of whites (2.5 y-Lovibond). The depth required for this is in itself an index of quality.

The unit shown in Fig. 2 will handle filters up to five feet in length; consequently, it is well suited to the solution of special cases which cannot be standardized.

Fig. 6 illustrates the effect of bed depth upon the adsorption capacity of 30-60 mesh Georgia-Florida fullers earth (floridin) for a standard 60-40 solution of steam refined stock. It is to be noted that the 15 in. (38.1 cm.) bed held up in capacity as well as the 20 in. bed at higher rates of percolation, but that the 5-in. bed declined rapidly. The shorter bed yielded the same volume of decolorized oil per unit of adsorbent, but only at very long contact times. For example, the 5-in. bed required 23.8 hours to



SALT REDUCED FROM 50 TO 4.5 P.T.B.*
THROUGHPUT RAISED 500 BARRELS PER DAY
ON-STREAM TIME INCREASED 70 DAYS PLUS

** Pounds NaCl per thousand 42 gal. bbls.*

The Petreco Electromatic Desalter shown above is protecting the modern Cooperative Refinery from salt troubles.

Soon after this refinery first went on-stream, coking of the tubes in the topping and cracking plant heaters was evident. Petreco was consulted, tests were made, and recommendations submitted to the Co-op executives. The Petreco Desalter was installed, and has been proving its value ever since. Increases such as *500 barrels per day* additional plant capacity, and *over two months* of on-stream time are ample proof of this value.

Additional benefits from the Petreco Process cited by Cooperative are decreased ammonia consumption, lowered costs on straight run gasoline treatment, and marked decrease in metal losses, especially in the cracking furnace tubes.

Figures equally impressive are being noted every day by both large and small users of the Petreco Process. A study of your salt problem involves no obligation, and your inquiries are welcomed.

Figures Prove

PETRECO PERFORMANCE

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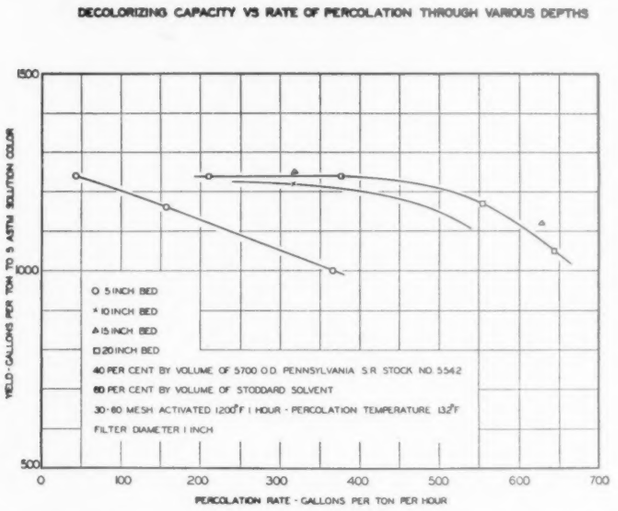
DECOLORIZING CAPACITY VS RATE OF PERCOLATION THROUGH VARIOUS DEPTHS
YIELD - GALLONS PER TON TO 5 ASTM SOLUTION COLOR
1500
1000
500
0
100
200
300
400
500
600
700
PERCOLATION RATE - GALLONS PER TON PER HOUR
O 5 INCH BED
* 10 INCH BED
Δ 15 INCH BED
□ 20 INCH BED
40 PER CENT BY VOLUME OF 5700 O.D. PENNSYLVANIA S.R. STOCK NO. 5542
60 PER CENT BY VOLUME OF STODDARD SOLVENT
30-60 MESH ACTIVATED 1200°F 1 HOUR - PERCOLATION TEMPERATURE 132°F
FILTER DIAMETER 1 INCH

Fig. 6—Effect of bed depth upon the adsorption capacity of fullers earth

yield 1240 gals. per ton to 5 ASTM solution color, whereas the same test carried out with the 15-in. bed was completed to the same color and yield in 4 hours.

One hundred grams of activated 30-60 mesh Georgia-Florida fullers earth ordinarily will fill a 1-in. diameter filter up to 15 ±2 inches. Variations of this order do not effect capacity an appreciable amount, and for this reason, 100 grams was taken as standard for routine tests.

Rate of Percolation

The maximum allowable laboratory rates vary with most of the factors discussed above. With stock No. 5542 in 40% solution, a rate of 1.5 ml per 100 grams permitted (216 gals. per ton per hour) through 15 in. of 30-60 mesh earth was the maximum rate after which yields dropped off; whereas, stock No. 1700 in 40% solution could be percolated at 3.0 ml per 100 grams per minute (432 gals per ton per hour). Rates greater than these reduced the accuracy of a test, especially where comparisons were being made between a standard fullers earth and an unknown.

Activation

The decolorizing capacity of Georgia-Florida fullers earth for stock solutions increases almost linearly with increasing temperature of activation from 400° up to 1250°F., thereafter, it decreases rapidly beyond 1300°F., see Fig. 7. Synthetic adsorbents exhibit even sharper breaks in decolorizing power. Activated bauxites are more resistant to high temperatures of activation. For routine testing,

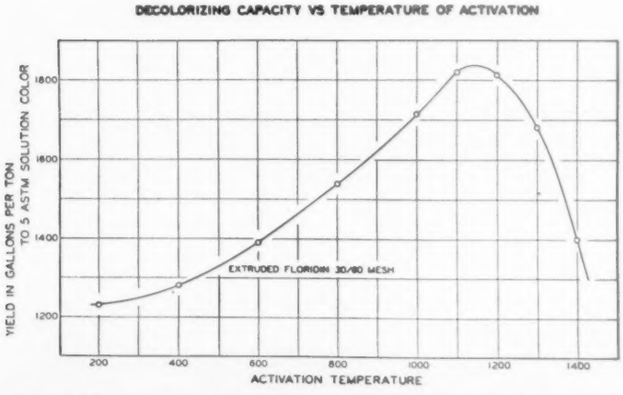

Fig. 7—Effect on decolorizing capacity of increases in temperature of activation

1200°F. has been chosen, since it gives a near maximum yield, is high enough to burn out carbonaceous matter, and eliminates the possibility of false values because of activations at high temperatures during the unknown history of the sample. This is especially important in the case of regenerated samples. Accurate control of activation temperatures is maintained by use of a muffle furnace with an automatic control.

In order to obtain the data shown in Table 1, a batch of approximately 1500 grams of 30-60 mesh air dried standard Georgia-Florida fullers earth was thoroughly mixed through a riffle, then charged to a muffle furnace at 1200°F. (649°C.) in 8 separate sample pans, one at a time at intervals of time until all samples were in the furnace, the first sample charged having been there for 24 hours at 1200°F., the last for only one-fourth of an hour, when the end of the activation time was reached. All samples were removed together and placed in a 230°F. (110°C.) oven to cool before charging to the testing filters. Zero time was taken when the furnace returned to 1200°F.

The sample pans had the dimensions 7.5 x 7.5 x 5.2 cm deep (volume 290 cu. cm) and held about 160 grams of unactivated 30-60 mesh fullers earth.

The data obtained, Table 1, in this manner indicates that most of the increase in adsorption capacity takes place in the first hour, thereafter the increase continues at a much reduced rate and the curve becomes nearly flat. With accurate control of temperature at 1200°F. (649°C.), yields are easily duplicated. Therefore, it is standard practice to activate all samples at 1200°F. (649°C.) for one hour. However, this applies only to 290 cubic centimeters of 30-60 mesh fullers earth in pans of the size and type mentioned above in still air.

TABLE 1—Time of Activation at 1200 F.

Activation Time At 1200°F. In Hours	Yield In Gals. Per Ton To 5 A.S.T.M. Color Stock Solution No. 5542
¼	853
½	960
1	1,026
5	1,053
10	1,094
15	1,080
20	1,094
24	1,120

After a sample has been activated and is ready for charging to the filter, it is often necessary to store it for a period of time in a low temperature oven at 230°F., to cool and hold until everything is in readiness for the test. This procedure led to the discovery that Georgia-Florida fullers earth gained in weight when exposed to the air in an oven at 230°F., and also that it gained in decolorizing power at the same time (Table 2).

TABLE 2—Effect of exposure of activated Fullers Earth To Air at 230°F.

Time In Oven at 230°F. After Activation At 1200°F. Hours	Per Cent Gain In Weight	Yield In Gals. Per Ton To 5 ASTM Solution Color	Per Cent Change In Decolorizing Capacity
0	0	1,308	0
2	0.07	1,320	+ 0.9
47	0.67	1,452	+11.0
96	0.84	1,452	+11.0

This effect has been previously observed by Henderson, Ridgway and Ross (8). In Table 3, it is seen that for activated bauxite, the effect is exactly the opposite and exposure to the air in an oven at 230°F. causes a decline in efficiency.

TABLE 3—Effect of Exposure of Activated Bauxite to Air at 230°F.

Time In Oven At 230°F. Hours	Bauxite Yield Decolorized Solution to 5 ASTM In Gals. Per Ton	Per Cent Change In Decolorizing Capacity
0	844	0
30	825	— 2.3
72	770	— 8.8
86	797	— 5.6
124	747	—11.5

On the basis of these data, it is standard practice to

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leave fullers earth samples in the oven at 230°F. over night, but to test bauxite as soon as possible after activation.

Table 4 gives the yield at various temperatures of percolation.

TABLE 4—Percolator Temperature

Percolation Temperature °F.	Fullers Earth		Bauxite	
	Solution Yield to 5 ASTM Color	Neutral Yield to 2 ASTM Color	Solution Yield to 5 ASTM Color	Neutral Yield to 2 ASTM Color
	Gals. Per Ton		Gals. Per Ton	
75	1,630	3,000	710	1,750
133	1,710	3,360	1,260	1,200
210	1,750	3,000	1,350	....
240	....	2,510	....	600

Color Measurement

The correlation of results of a decolorizing test involves the determination of the relationship of the volume of oil decolorized to a true color scale as shown in Fig. 3. The most satisfactory instrument for color measurement has been the Duboscq Colorimeter, using the procedure of Ferris and McIlvain (3) and a Gibson Filter (4). For control of materials coming from the mine, where the testing solution and characteristics of the adsorbent are not varied, the Kuder Photo-electric Colorimeter (6) has proven most satisfactory, affording rapid, accurate and reproducible color measurements. The Duboscq and Kuder readings are converted by suitable constants to the arbitrary NPA (ASTM) scale of the Union Colorimeter (5), which is the accepted standard for petroleum colors. Petrolatums, waxes, and vegetable oils are rated according to the Lovibond scale (7).

Laboratory Standards

It will be noted in Tables 1, 2, and 4, for example, that the yields of stock solution to the same color vary considerably. This is because of the natural variations in oils, and is especially true of steam refined stocks. The yield of decolorized oil from the same drum cannot be accurately predicted. To overcome these difficulties, it has become standard practice to have on hand for continual reference a laboratory standard adsorbent clay. A sample of standard is tested every time a series of samples is to be evaluated, and care is taken to see that the standard receives exactly the same treatment as the others and all are tested from the same batch of solution. The yield of decolorized oil on the standard is accepted arbitrarily as 100%, and the efficiency of the unknown clays is calculated in percentage by comparing the yield with the standard. Fullers earth is normally partially activated at the mines by drying at 350° to 600°F. Data on commercial clay gives rather definite indications of suffering a slight but gradual loss in efficiency. Hence, a specially prepared clay is used as a standard.

Crude lump clay is air dried in the sun, ground and screened, then thoroughly mixed for uniformity and activated in the laboratory as needed. This is a 30-60 mesh air dried Georgia-Florida fullers earth, selected because its efficiency matches closely that of the previous laboratory standards and usually the quantity prepared is sufficient for several years. As the supply of standard clay becomes exhausted, one or two sacks are put away for reference and are used only for extremely important tests. In this way, the laboratory has at all times material on hand for the study of trends of quality and variation over a period of years.

Although this laboratory sample of fullers earth is the primary standard relied upon for evaluation of all adsorbents, for routine testing of shipments, plant control, and mine prospect samples, a laboratory standard solution is also used. This is a solution of 40% by volume of 600°F. Pennsylvania steam refined stock in 60% by volume of Pennsylvania straight run Stoddard Solvent, giving a solution gravity of 40° API and an optical density of approximately 3500. The stock for this solution is purchased in drums, carload lots, with maximum attention to the uniformity but the uncontrollable variations are reflected in the daily yields of the standard adsorbents as shown.

Accuracy

Table 5 contains a tabulation of yields obtained from two standard fullers earth samples under identical conditions of preparation and evaluation. The object was to determine the relative decolorizing power of the two samples. The ratio of the yields ranges from 1.03 to 1.06, with an average of 1.05.

TABLE 5—Evaluation of an Unknown Fullers Earth

Fullers Earth Standard No. 2424	Fullers Earth Unknown No. 4800	Ratio
338 ml	355 ml	1.05
327	342	1.05
347	367	1.06
343	357	1.04
332	350	1.05
327	347	1.06
333	344	1.03
339	350	1.05
340	356	1.05
327	343	1.05
329	344	1.05
331	348	1.05
335	350	1.06
321	335	1.04
339	355	1.05
301	320	1.06
306	318	1.04
310	330	1.06

Each sample:
100 grams 30-60 mesh
Activated 1200°F., one hour
Percolated at 132°F.
Rate 1.5 ml per minute
Dates of test 3/11/40 to 4/17/40
Yields to 90.3 O. D. (50 Kuder, high scale)

Since all samples are rated by comparison with the standards, the test is accurate to three parts in 100, although it will be noted that due to variations in the standard solution over the month's period of the test, the actual yield varied as much as 15%.

Conclusions

Testing equipment and procedures for rapidly and accurately evaluating the petroleum decolorizing efficiency of granular adsorbents have been described. Each of the controlling variables has been investigated and the error of the method established as less than 3%.

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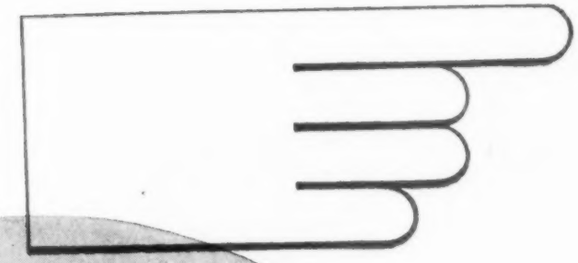

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Greater Use of Coal in Refineries

Anticipating that many refiners, in the future, will give more consideration to coal as plant fuel, in place of oil or gas, Refining Technology has completed a survey among selected refining companies, to learn the extent to which solid fuel is used today, and the factors that determined the type of fuel selected.

In many cases, the survey brought out, coal is now being used for the generation of steam for the processing units, solid fuel pulverizers making it possible to burn either coal or oil or gas, or combinations of these efficiently, with the same furnace equipment. Any consideration of the use of solid fuel today, operators said, should include the cost of installation of pulverizers and other costs of handling solid fuel, in addition to the cost of coal laid down at the plant.

Among refiners with plants in the East, study on this subject has been stimulated by a questionnaire sent out by the Petroleum Co-ordinator's Office in Washington, to determine whether it is possible for plants in this area to use more coal, and to this extent conserve the supply of fuel oil in this district. The accompanying article reports the data gathered by Refining Technology in its survey:

IN THE old days of petroleum refining, many plants, especially in the eastern part of the U. S., used solid fuel in the form of coal or coke for generating heat. Most of these boiler plants and batch stills were hand-fired and not equipped to also burn fuel oil or gas. In those days the therm value of oil was considerably higher than that of coal. The control of the heat input rates to the boilers or stills was relatively unimportant.

In recent years, however, with the advent of newly designed burners and heating units, the refiner found it more economical to burn his own excess fuel oil and waste gases. In addition, with the advent of continuous processes, it became necessary for the refiner to utilize the fuel that would be susceptible to automatic control for temperature and pressure fluctuation.

Within the past year, however, the greater demand and value for petroleum fuels, including the gases for making high octane number aviation gasoline, has caused some refiners to turn again to coal burning, in some cases in processing operations. The use of coal or coke, however, requires that the refiner be geographically situated so that the transportation cost from the mine will not become burdensome. The most efficient type of installation recently designed, consists of burners which will operate equally well on pulverized coal or coke, fuel oil or gas. As a preliminary to assist the refiner in the problem, the government has sent out a questionnaire prepared by Dr. John W. Frey, director of marketing, to determine why the individual refiner cannot burn coal rather than petroleum products.

While the relative cost of fuel oil, gas and coal will vary widely for refineries in different parts of the U. S., we may take as an example their relative value in the eastern area. Figures for the New York and Philadelphia districts, for example, may show widely different therm (100,000 BTU) values for the three types of fuel. Heavy fuel oil at $1.43 per bbl. has a therm value of approximately 60, or 2.4c per therm. The residue gas upon a bookkeeping basis may be given the same value of 2.4c per therm or, with a heating value of 15 therms per thousand, would be priced at 36c. The cost of coal delivered to a refinery at $3.80 per ton would have a therm value of 250, or a price of 1.5c per therm. Calculations of this type should be constantly studied by the fuel engineer of oil refineries.

In an attempt to determine how general the use of coal was in refineries, a questionnaire was submitted by Refining Technology to the manufacturing departments of selected refineries. A number of replies were received to the seven questions submitted. The following paragraphs headed by these questions, contains some of the answers received.

(1) Has Your Company Used Coal or Coke for Fuel During the Past Years?

Typical answers to this question were as follows:

By a refiner with 4 plants, ranging from 8000 to around 25,000 bbls. daily capacity, located in middle west territory where coal is approximately $3.75 per ton, delivered to the refinery: "We have used coal or coke at various times in all our refineries for the past 15 years, in both pulverized and lump form, for generation of steam for the process units."

By a western New York refiner, plant capacity 4000 bbls.: "We have used coal, principally in pulverized form, for several years, since a supply of natural gas formerly used became depleted."

From a large eastern refinery, which purchases their power requirements from the utilities: "We do not burn coal or coke, nor do we burn any substantial amount of fuel oil. Fuel oil is used only in starting up units, as our plants make sufficient gas to conduct all the operations. If it were necessary to generate the power used, the situation would be somewhat altered."

By a middle west refinery, plant capacity approximately 70,000 bbls.; coal costing $2.45 at the plant: "Our company has used solid fuels (coal and coke) for many years for steam generation, at no time, however, in process operations. At present solid fuels are pulverized before firing."

One company operating 4 refineries in different geographical locations, said coal was used at one plant for steam generation, price being the deciding factor. About 50 tons daily of locally mined, run-of-mine coal is burned.

Another large eastern refiner, which purchases its power requirements, stated that for many years the only fuels used had been oil and gas.

An Oklahoma refiner whose plant is approximately 25,000 bbls. daily capacity, stated neither coal or coke had been used in any refinery operation. Its fuel supply is natural gas, residue gas from refinery operations and fuel oil.

Another major company, with plants in the middle

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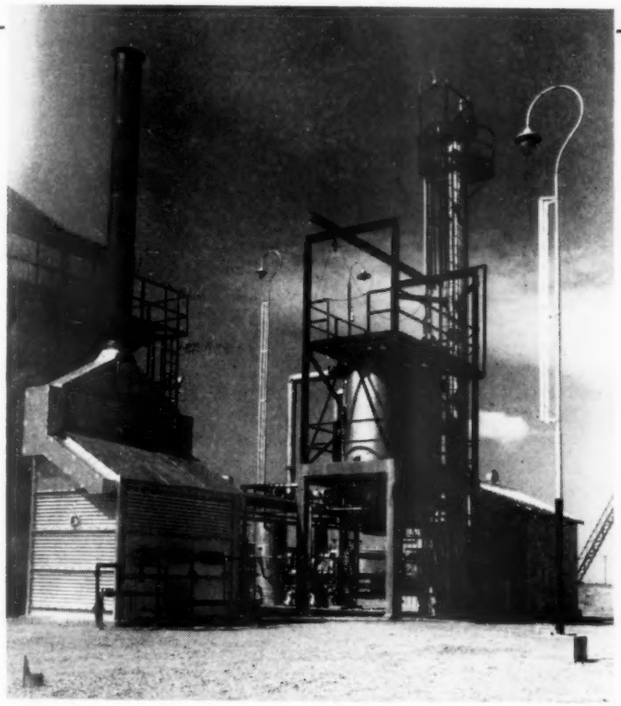

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west, southwest and on the Texas Gulf, stated it used neither coal nor coke at the present. "At one time we used pulverized coke for steam generation in one refinery," a company official said, "but this was discontinued due to the fact that a market for coke was developed and other types of fuel were readily available."

By a company with 3 plants in the east central section: "We use coal in lump form on underfeed stokers for steam generating purposes only, at one refinery. Our other plants are so located that coal could not be economically used and at the same time absorb all refinery gas production."

Through equipment manufacturers and coal companies, it was learned that ten other refining companies have furnaces equipped to burn either pulverized solid fuel, oil or gas. The majority of these are large companies near the eastern seaboard or Gulf coast.

(2) For What Purpose is Coal Being Used?

The object of this question was to determine if the use of coal is becoming general, rather than applied only to boiler plants. Of the refineries surveyed, mostly those of the large oil companies, it was reported the use of solid fuels was entirely limited to steam generation. However, it is well known from other sources and from published articles, that coal in solid or pulverized form, is being burned in distillation or cracking units, to a limited extent.

(3) In What Form is Coal Used—Pulverized or Lump?

The replies to this question indicated that of 14 installations reporting, 12 utilize coal or coke in pulverized form. Based upon a recent development in pulverized coal firing, it is likely that future installations will be of this type.

(4) Why is Coal Used Rather Than Oil or Gas?

The replies brought out some interesting viewpoints upon the subject. For example, the executive of a large company listed the following reasons which suggested the use of coal in refineries:

(a) Newer processes, such as polymerization and alkylation, utilize gases formerly burned as fuel.

(b) Gases formerly burned are in some cases sold to outside companies.

(c) Gases formerly burned are sold as liquefied propane and butane.

(d) During periods of high fuel oil prices, this commodity may be replaced with coal or coke.

(e) To dispose of coke which cannot be sold elsewhere, on account of specifications or unfavorable price conditions.

(f) To smooth over the sale—inventory—production statistics at any given time.

(g) Under conditions of unfavorable fuel oil prices and favorable gasoline prices, it may be desirable to coke the fuel oil and utilize the coke as refinery fuel.

Another refiner significantly states, "Because it is cheaper." Another, for the same reason, replies that coal is used whenever the values of oil and gas makes its use attractive. Some others replied in similar terms, but in none of the letters received was the significant reason mentioned of aiding national defense by conserving petroleum products.

(5) What Price are You Paying for Coal and What Value Do You Assign to the Fuel Oil or Gas Burned?

This was probably an unfair question to most refiners using coal, since many costs in addition to the delivered price per ton, must be considered for coal when utilized as refinery fuel. Two prices mentioned, however, were $2.40 and $3.80 per ton, laid down at the plant. No refinery realization figures were given on the coke, fuel oil, or gas.

Several refiners indicated that the values assigned fuel oils and gas are equalized on a calorific basis with the cost of purchased fuels. One refiner analyzed the situation in more detail and his reply is quoted below.

"This question can only be answered generally, as it depends on coal supply, coal or coke burning equipment available, gas and fuel oil sales position, and prices existing at any given time.

"In a typical refinery, coal of 12,000 B. T. U. per pound as received, can be obtained at $3.80 per ton in cars delivered to the refinery. The fuel oil value can be approximately ascertained by the following formula:

$$\frac{(\text{Delivered Coal Price} + A+B+C)(\text{Oil BTU/Gal.})(E_{oil})}{(\text{Coal BTU/Lb.})(E_{coal})(2000)} - D$$

Where

A = Cost of unloading and bunkering coal.
B = Cost of preparing coal for burning (pulverizer, stoker cost, etc.)
C = Additional maintenance costs of boiler and coal preparation equipment.
D = Cost of unloading, heating and pumping oil.
E_{oil} = Average boiler efficiency with oil fuel.
E_{coal} = Average boiler efficiency with coal fuel.

Depending on local plant conditions, the sum of A, B, C may be from $.15 to $.50 per ton, and the cost of D, $.0005 to $.0020 per gal.

For the typical example chosen above, the equivalent value of oil, assuming A+B+C = 30c per ton, D = $.0010 per gallon, E_{oil} = 76%, and E_{coal} = 74%

$$= \frac{(3.80 + .30)\ (153{,}000)\ (76)}{12{,}00 \times 74 \times 2000} - 0.001$$

= $.0258 per gallon.

Other conditions warranting, oil would be sold if the sale price were greater than this value plus the cost of loading tank cars or trucks.

(6) What is Your Average Daily Tonnage of Coal Used?

Replies from four companies showed that the average coal consumption is between 50 and 400 tons per day. In addition to this yearly average, the coal used normally fluctuates with the season. One refiner states, "During the winter when gas production is low, due to including more butane in motor gasoline to increase volatility for cold weather motor car operation, the use by 4 or 5 refineries equipped to burn coal, may average 300 tons per day. In summer the coal consumption may average 100 tons per day."

If a refiner burns 400 tons of coal a day, this would be equivalent to 100,000 therms. This heating value would release the equivalent of 1700 barrels of fuel oil per day, and perhaps represent a refinery with a daily crude throughput of 17,000 barrels.

(7) Are the Furnaces Where Coal is Used Equipped to Also Burn Oil or Gas?

The answers to this question showed that in 7 of the 9 cases reported, furnaces were equipped to burn pulverized fuel, oil or gas. The other two cases represent boilers fired with solid fuel through stokers. In 6 cases of coal fired boilers, no information was given as to whether or not they were equipped for oil and gas firing. In this connection one refiner reports; "In some cases our boilers are equipped with pulverizers and in other cases with stokers." In the former, any combination of gas, coal or oil can be burned and this arrangement is by far the most desirable installation for an oil refinery."

SUMMARY

The results of this survey indicate that many refiners in the U. S. are utilizing pulverized coal burners for firing stills and boilers, while it is well known that another large

Greater Use of Coal in Refineries

fuel burning industry, the railroads, are turning from coal to diesel oil or heavy fuel oil. There was no indication from this survey that we need be worried about depletion of the country's coal supply.

In a normal year, for example, like 1928, total coal production in this country was roughly 400,000,000 tons, or approximately 1,000,000 tons per day. Assuming every refiner of the U. S. used only coal for fuel to process his 4,000,000 barrels of crude per day, they would require a 100,000 tons of coal, or only 10% of the 1938 output. A coal shortage, therefore, does not appear to be a possibility from any demand from petroleum refineries.

Some of the comments from refiners upon this important subject provide some worthwhile thought-producing ideas which may enable one refiner to benefit by the experience of another. Among these thoughts were the following:

"Acid sludges may be specially treated to neutralize the acidity, blended with fuel oil, and burned in special burners. However, this is an expensive operation, and an oil mill suitable for handling acid sludge direct has recently been perfected by one of the manufacturers by incorporating an acid resisting internal construction. Several companies have units of this type in service, and they are, I believe, satisfactory."

"Coke is hard to handle when made in shell coking stills or most delayed coking units on account of the low volatility and grindability of the product. Cracking coil reaction chamber coke is softer and more volatile. Coke can be pulverized and burned directly in boiler furnaces where the furnace temperature is sufficiently high to promote rapid ignition and combustion. In completely water cooled furnaces it is necessary to mix coal and coke together to produce rapid ignition and combustion, or to fire some gas or oil along with the coke. Coke cannot be burned on stokers on account of the very low ash content which is insufficient to cover and protect the grate. It is possible to use a mixture of coal and coke on stokers if a high ash coal is the type used."

Another refiner states; "Fuel is only used in starting up units, as our plants make sufficient gas for all fuel requirements." This refinery purchases their power, which means that all fuel burned is used directly in the refinery operation. They also extract propane and butane from the gas, which practically balances the residual gas to the refinery power requirement. On the same subject, another refiner writes; "We are not equipped at any of our refineries to burn coal or coke and it would require a considerable investment in new equipment to permit the use of either of these commodities. For the industrial engineer of refineries located close to the eastern seaboard, a study of this problem from the standpoints of economy and national defense, should be well justified.

Societies Form Clearing House On National Defense Problems

To cope with general defense emergency problems, the 6 national engineering societies have joined to organize the Engineers' Defense Board, to provide a central agency that will be prepared to assist both industry and government agencies with engineering knowledge and experience.

The board has an initial membership of 5 representatives each from the following societies: American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers; American Institute of Electrical Engineers, Society of Automotive Engineers and the American Institute of Chemical Engineers. One of the representatives of the chemical engineers' society is R. E. Wilson, president of the Pan American Petroleum Transport Co., who until recently was petroleum consultant to the Office of Production Management in Washington.

The board will undertake to function as a clearing house for the engineering professions on information dealing with defense problems, particularly in relation to shortages of materials and will attempt improvements of standards and practices of long standing where savings of materials can be made. In many instances it is expected the results will produce lasting benefit to the public, as well as more immediate aid to defense. It will also take an interest in methods for implementing the work of the advisory technical committees of the National Academy of Science and will undertake specific studies on request of the Army, Navy and official defense agencies.

Officers of the board are Robert E. McConnell, OPM consultant, chairman; Dr. Harry Rogers, president of Brooklyn Polytechnic Institute, vice chairman, and Dr. A. B. Parsons, secretary, AIME, secretary.

ACS Appoints Committee On Employe Relations

Appointment of a Committee on Economic Status, to foster sound relationships between employers and employes in the chemical industry, is announced by the American Chemical Society. It will study the broad question of employment in professional work in the field of chemistry, and will also act in an advisory capacity to both employers and employe groups, when called upon.

The Society directors have publicly suggested that "all worthy chemical internes and professionals, when engaged in professional work, be paid on a salary and not an hourly basis." They had previously defined these groups and suggested minimum starting salaries for each. (See Refining Technology, Oct. 15, p. R-334).

Members of the Committee on Economic Status are Dr. Lawrence W. Bass, assistant director of the Mellon Institute of Industrial Research; Dr. Walter A. Schmidt, president of Western Precipitation Co., Los Angeles; Dean Frank C. Whitmore, Pennsylvania State College; George Calingeart, director of chemical research, Ethyl Gasoline Corp., Detroit; Dr. Harlan L. Trumbull, B. F. Goodrich Co., Akron, O.

Roberts Re-elected Chairman ACS Petroleum Division

J. K. Roberts, director of research, Standard Oil Co. of Indiana, was re-elected chairman of the Petroleum Division of the American Chemical Society, at the annual business meeting of the division in Atlantic City, on the occasion of the recent annual meeting of the Society.

Cary R. Wagner, manager of research and development, Pure Oil Co., was re-elected secretary, and M. R. Fenske, Pennsylvania State College, was again made vice chairman. Members of the executive committee, in addition to the above, are Per K. Frolich, Standard Oil Development Co. and J. C. Morrell, Universal Oil Products Co.

Secretary Wagner has suggested to members it is not too early to submit papers for the 1942 spring meeting of the Society, in Memphis. Feb. 16 is the deadline for the secretary to receive abstracts of papers to be presented.

Greater Need for Hydrogen Sulfide Removal is Seen

A large potential field for the Girbotol process for scrubbing and recovering acid gases from gaseous mixtures, lies in petroleum refining, for the removal of hydrogen sulfide from refinery gases and liquids, it was brought out in a paper on this process presented before the Process Division of the American Society of Mechanical Engineers, Louisville, Oct. 12-15. The paper, entitled "Application of the Girbotol Process to Industry", was prepared by B. D. Storrs and R. M. Reed, of the Girdler Corp., Louisville.

In the oil industry, the process, to date, has been principally applied to the removal of hydrogen sulfide from sour natural gas. It has also found some use for removal of carbon dioxide from raw hydrogen in refineries producing hydrogen for hydrogenation processes.

It is well known to the technologists of the industry that in either the alkylation or the selective polymerization plus hydrogenation process for the manufacture of 100-octane number gasoline, the presence of hydrogen sulfide is harmful. For example, as much as 50% of hydrogen sulfide present in the charging stock may react with the butylenes to produce butyl mercaptans. The corrosive effect of hydrogen sulfide upon iron equipment, even at low temperatures, is also well known.

The attached flow diagram (Fig. 1) illustrates the general principle of the process. The raw gas containing hydrogen sulfide or carbon dioxide flows into the base of the absorber, which is a bubble plate or packed tower. Lean amine solution enters the absorber near its top and flows in counter-current relation to the rising gas, absorbing hydrogen sulfide or carbon dioxide in its downward passage. Purified gas leaves from the top of the absorber.

Rich amine solution containing the removed acid gas flows by absorber pressure, or is pumped, from the base of the absorber through the heat exchanger and thence into the upper section of the reactivator, which is also a bubble plate or packed tower. The reactivated amine solution flows through the heat exchanger and is then pumped through the solution cooler back to the top of the absorber. The hydrogen sulfide or carbon dioxide and steam flow together from the top of the reactivator to the acid gas cooler, where the steam is condensed. The condensate returns to the top of the reactivator as reflux and the cooled acid gas flows to disposal or recovery.

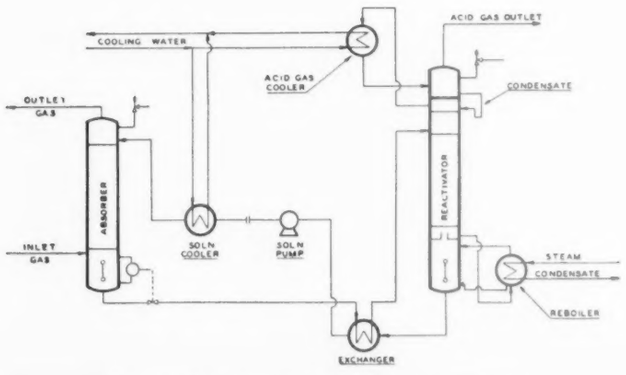

Fig. 1—Flow diagram of Girbotol process

New Patents

Compiled by R. E. Burnham, patent and trade-mark attorney, 511 Eleventh St., NW., Washington, D. C., from whom copies may be obtained at rate of 25c each. State number of patent and name of inventor when ordering.

Production of motor fuel—Maurice H. Aveson, Flossmoor, Ill., assignor to Standard Oil Co. (Ind.) Filed Jan. 26, 1938. No. 2,257,723.

Catalytic treatment of hydrocarbons—Willis A. Yarnall, Beacon, N. Y., assignor to Texas Co. Filed Mar. 24, 1939. No. 2,257,896.

Purification of acid treated oils—Sylvan R. Merley, Riverton, N. J., assignor to Cities Service Oil Co. Filed Dec. 7, 1939. No. 2,257,914.

Treatment of petroleum products—Alexander N. Sachanen and Rowland C. Hansford, Woodbury, N. J., assignors to Socony-Vacuum Oil Co. Filed Jan. 20, 1939. No. 2,257,920.

Separating hydrocarbon fluids—Percival C. Keith, Jr., Peapack, Luther R. Hill, Radburn, and Gordon J. Robertson, Westfield, N. J., assignors to M. W. Kellogg Co. Filed May 23, 1939. No. 2,258,015.

Treating hydrocarbon fluids—Percival C. Keith, Jr., and Luther R. Hill, assignors to Polymerization Process Corp. Filed Aug. 12, 1939. No. 2,258,016.

Treatment of hydrocarbons—Wayne L. Benedict and Louis S. Kassel, Chicago, assignors to Universal Oil Products Co. Filed Sept. 30, 1940. No. 2,258,236.

Treatment of hydrocarbon distillates—Warren W. Johnstone, Chicago, assignor to Universal Oil Products Co. Filed April 27, 1939. No. 2,258,249.

Process for extraction—Albert V. Caselli, Oakland, and Alan C. Nixon, Berkeley, Calif., assignors to Shell Development Co. Filed Jan. 12 1940. No. 2,258,279.

Making motor fuel—Donald R. Stevens, Swissvale, and William A. Gruse, Wilkinsburg, Pa., assignors to Gulf Research & Development Co. Filed Jan. 19, 1938. No. 2,258,368.

Process of desulphurizing petroleum oils—Thomas F. McCormick, Oakland, Calif., assignor to Tide Water Associated Oil Co. Filed Nov. 16, 1935. No. 2,258,512.

Lubricating oils—Bert H. Lincoln and Gordon D. Byrkit, Ponca City, Okla., assignors to Continental Oil Co. Filed May 24, 1939, July 5, 1940, July 5, 1940. Nos. 2,257,750, 2,257,751, and 2,257,752.

Insulating oils—Charles E. Trautman, East McKeesport, Pa., assignor to Gulf Research & Development Co. Filed Mar. 22, Oct. 31, Nov. 9, and Nov. 9, 1940. Nos. 2,257,869, 2,257,870, 2,257,871, and 2,257,872.

Method of and apparatus for treating grease — Harold M. Fraser, New Orleans, La., assignor to International Lubricant Corp., same place. Filed May 24, 1940. No. 2,257,945.

Lubricant—Clarence M. Loane and Bernard H. Shoemaker, Hammond, Ind., assignors to Standard Oil Co. (Ind.) Filed May 18, 1939. No. 2,257,969.

Preparation of catalysts—Willem F. Engel, Amsterdam, Netherlands, assignor to Shell Development Co. Filed Oct. 9, 1939. No. 2,258,111.

Organo-metallic Diesel fuel ignition promoters—Pharis Miller, Des Moines, Iowa, and Gould H. Cloud, Elizabeth, N. J., assignors to Standard Oil Development Co. Filed July 23, 1938. No. 2,258,297.

Solid lubricant—Arnold J. Morway, Roselle, and John C. Zimmer, Hillside, N. J., assignors to Standard Oil Development Co. Filed May 6, 1938. No. 2,258,300.

Lubricant for lubrication of ball bearings, etc.—Arnold J. Morway, Roselle, and Alan Beerbower, Elizabeth, N. J., assignors to Standard Oil Development Co. Filed May 11, 1938. No. 2,258,301.

Lubricant—John C. Zimmer, assignor to Standard Oil Development Co. Filed Apr. 7, 1938. No. 2,258,309.

Gasoline manufacture—Ernest W. Thiele, Chicago, assignor to Standard Oil Co. (Ind.) Filed Feb. 5, 1938. No. 2,258,633.

Treating hydrocarbon fluids—Harold V. Atwell, White Plains, N. Y., assignor to Process Management Co. Filed July 29, 1938. No. 2,258,726.

Treatment of hydrocarbon fluids—Gerald L. Eaton, Glen Osborne, Pa., assignor to Polymerization Process Corp. Filed June 4, 1938. No. 2,258,749.

Catalytic hydrocarbon conversion, and catalytic conversion of hydrocarbon oils—Ralph M. Melaven, Highland, Ind., and Rodney V. Shankland, Chicago, assignors to Standard Oil Co. (Ind.) Filed Jan. 19 and 25, 1939. Nos. 2,258,786 and 2,258,787.

Production of lubricants—Mathias Pier and Friedrich Christmann, Germany, assignors to William E. Currie, New York. Filed Jan. 19, 1935. No. 2,258,806.

Motor fuel production—Harold V. Atwell, White Plains, N. Y., assignor to Process Management Co. Filed Oct. 30, 1937. No. 2,258,839

Foam Composition—Ernest F. Goodner, Berkeley, Calif., assignor to Standard Oil Co. (Calif.) Filed Sept. 23, 1939. No. 2,258,587.

Lubricating oil composition—Franz R. Moser and Albert J. Dijksman, Amsterdam, Netherlands, assignors to Shell Development Co. Filed Nov. 27, 1939. No. 2,258,591.

Preparation of resinous reaction products of sulphur dioxide and olefins—Frederick E. Frey, and Louis H. Fitch, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Co. Filed March 16, 1932. No. 2,258,702.

Method of preparing a hydrocarbon oil having drying characteristics—Herbert M. Steininger, Kansas City, Mo., and Roy J. Diwoky, Chicago, assignors to Standard Oil Co. (Ind.) Filed July 30, 1938. No. 2,258,821.

Insecticidal oil spray—Alfred W. Weitkamp, Hammond, Ind., assignor to Standard Oil Co. (Ind.) Filed Aug. 26, 1939. No. 2,258,832.

Insecticidal oil spray—Elmer W. Adams, Hammond, Ind., and Thomas E. Sharp, Chicago, assignors to Standard Oil Co. (Ind.) Filed Aug. 26, 1939. No. 2,258,833.

Deteriorating Effect of Crankcase Residue on Fresh Oil Is Studied

TULSA, Oct 25

The effect on oil deterioration of residues left in the crankcase when the oil is drained, is greater than has been generally recognized, technologists of Continental Oil Co. told the Fuels and Lubricants Meeting of the Society of Automotive Engineers, held here Oct. 23-24. This same condition, in engine stand tests, may make the results misleading, thus emphasizing the need for thoroughly cleaning the engine before starting another test.

This was a principal conclusion resulting from extensive tests on selected new type motor oils, including chemical and mechanical laboratory investigations, and also road tests under severe temperature and speed conditions, made in 1940 in southern Arizona. These road tests have been previously reported.*

"Since it has been shown that the road test units displayed higher rates of oil change, even though they had lower operating temperatures," this report stated, "it appears that the catalytic effect of oil deterioration residues left in the engines at oil change periods is of greater magnitude than is generally recognized; and it is doubtful if increased engine stand oil temperature can be satisfactorily substituted for this effect.

"It is recognized that engine stand operations should always start with a scrupulously clean engine, to avoid the 'poisoning' effect of residues on the next oil tested. Otherwise, the observed results are almost invariably misleading. The work indicates the desirability of consideration of this factor in engine stand tests."

*Refining Technology, Aug. 20, 1941, pg. R-267.

The duration of the road tests was 10,080 miles and the engines were drained approximately every 2500 miles, and some oil deterioration products were unavoidably left in the engines to contaminate, to some degree, the succeeding oil change, it was reported. Lacquer deposition was noted in some instances, indicating that these oils had approached or just passed the critical point and that resins were dropping out of solution. "This suggests the probability that the oil soluble metallic catalysts left in the engines at the drain periods were sufficient to accelerate oil decomposition and the resultant deposition," it was stated.

The data accumulated in the investigations indicate, it was concluded, that there is still considerable room for debate as to the optimum degree of peptizing or detergency desired in an oil. On this point it was said: "The minimum change in oil characteristics in service is most imperative, along with enough peptizing to prevent excessive deposition of materials of either intrinsic or ex-

Table 1—Physical Characteristics of Motor Oils Tested

	OIL I SAE 20	OIL II SAE 20	OIL III SAE 20	OIL IV SAE 20	OIL V SAE 20
Gravity	30.6	30.6	31.3	29.3	29.1
Flash, °F.	450	450	415	435	430
Fire, °F.	515	515	470	500	490
Viscosity at 100°F. Centistokes	70.8	70.8	66.45	72.95	74.9
Viscosity at 100°F. S.S.U.	327	327	307	337	346
Viscosity at 210°F. Centistokes	8.71	8.71	8.77	8.39	8.77
Viscosity at 210°F. S.S.U.	54.8	54.8	55	53.7	55
Viscosity Index	104	104	112	91.5	100
Pour Point, °F.	5	5	—20	0	—5
Color, A.S.T.M.	3—	3—	5+	1½+	4½+
Color, True Color Units*	16	16	44	4	37
Steam Emulsion Number	90	90	960	90	120
Herschel Demulsibility	1,200	1,200	20	600	1,620
Neutralization Number	0.03	0.025	0.05	0.03	0.05
Saponification Number	2.50	1.84	0.30	0.45	0.20
Conradson Carbon Residue, %	0.01	0.01	0.28	0.04	0.33
Sulfur, %	0.38	0.38	0.10	0.21	0.18
Chlorine, %	0.068	0.070	0.00	0.00	0.00
Phosphorus, %	0.00	0.00	0.010	0.012	0.010

*In the examination of oils, the color is reported in true color units determined by the procedure of Parsons and Wilson (4). The use of this color scale also permits comparison of colors of used oils which are far darker than the range of the conventional color scales.

	OIL I SAE 30	OIL II SAE 30	OIL III SAE 30	OIL IV SAE 30	OIL V SAE 30
Gravity	30.6	30.7	28.9	28.7	29.5
Flash, °F.	480	480	450	450	445
Fire, °F.	550	550	510	510	510
Viscosity at 100° F. Centistokes	93.3	93.8	121.8	109.1	91.8
Viscosity at 100° F. S.S.U.	431	433	562	504	424
Viscosity at 210° F. Centistokes	10.42	10.48	12.42	10.80	10.38
Viscosity at 210° F. S.S.U.	60.7	60.9	67.9	62.0	60.5
Viscosity Index	100	102	101	89	103
Pour Point, °F.	10	10	—10	0	20
Color, A.S.T.M.	2½	3	5	2+	5—
Color, True color units	13	18	42	9	40
Steam emulsion number	90	90	420	150	150
Herschel demulsibility number	1,200	1,620	270	1,320	1,620
Neutralization number	0.03	0.015	0.06	0.04	0.05
Saponification number	2.46	1.34	0.31	0.37	0.21
Conradson carbon residue—%	0.03	0.04	0.37	0.06	0.21
Sulfur—%	0.18	0.18	0.23	0.21	0.08
Chlorine—%	0.068	0.073	0.00	0.00	0.00
Phosphorus—%	0.00	0.00	0.008	0.012	0.00

Table 2—Comparison of Oil Changes, in Percentages of Changes in Reference Oil 1.

Test Equipment	Grade SAE No.	OIL I	OIL II	OIL III	OIL IV	OIL V
——INCREASE IN NEUTRALIZATION NUMBER——						
Modified Underwood	20	100	117	141	77	128
Modified Underwood	30	100	71	150	67	240
Engine F-1	20	100	21	100	94	73
Engine F-2	20	100	70	105	93	98
Engine G-1	20	100	38	102	68	64
Engine G-2	20	100	79	72	67	53
Engine H-1	20	100	88	100	65	...
Engine H-2	20	100	125	220	104	106
Road Group A	30	100	132	...	...	740
Road Group B	30	100	36	94	...	...
Road Group C	30	100	160	...	170	...
Road Group D	30	100	87	1113	1080	...
——FORMATION OF SLUDGE——						
Modified Underwood	20	100	134	68	81	134
Modified Underwood	30	100	91	100	76	76
Engine F-1	20	100	23	23	236	86
Engine F-2	20	100	65	100	165	124
Engine G-1	20	100	33	33	50	67
Engine G-2	20	100	100	33	67	89
Engine H-1	20	100	46	19	77	...
Engine H-2	20	100	300	71	400	470
Road Group A	30	100	137	...	...	158
Road Group B	30	100	78	37	...	...
Road Group C	30	100	142	...	117	...
Road Group D	30	100	91	200	164	...
—INCREASE IN VISCOSITY AT 210°F., S.S.U.—						
Modified Underwood	20	100	108	176	77	141
Modified Underwood	30	100	86	200	67	300
Engine F-1	20	100	4	234	135	61
Engine F-2	20	100	45	137	118	125
Engine G-1	20	100	6	102	22	43
Engine G-2	20	100	30	33	21	30
Engine H-1	20	100	42	306	49	...
Engine H-2	20	100	77	970	168	272
Road Group A	30	100	91	...	...	254
Road Group B	30	100	44	156	...	...
Road Group C	30	100	121	...	169	...
Road Group D	30	100	92	388	326	...
——FORMATION OF RESIN——						
Modified Underwood	20	100	109	151	67	109
Modified Underwood	30	100	90	180	50	450
Engine F-1	20	100	27	176	115	99
Engine F-2	20	100	74	126	96	125
Engine G-1	20	100	35	120	56	60
Engine G-2	20	100	53	57	44	50
Engine H-1	20	100	71	185	83	...
Engine H-2	20	100	99	242	108	118
Road Group A	30	100	74	...	...	500
Road Group B	30	100	41	130	...	...
Road Group C	30	100	115	...	169	...
Road Group D	30	100	72	590	523	...

trinsic origin. The evidence certainly indicates the desirability of preventing the formation of products of oil change, rather than permitting their formation and causing them to be dissolved in the oil, since such oil soluble products result in accelerated rates of oil change, due to their catalytic effect."

Prior to the road tests, which were made on 5 selected oils (Table 1) chemical laboratory and engine stand tests were made of 12 commercial oils marketed as premium-grade oils by the predominant oil companies and of 14 experimental or development oils. Of these 26 oils, three of the commercial oils and two of the experimental oils were selected for the road tests.

Oil 2 in Table 1 is a solvent-treated, Mid-Continent paraffin base oil blended with two addition agents. One of the addition agents is Thialkene Inhibitor, a sulfur-type antioxidant and corrosion inhibitor. The other is Methyl di-Chlor Stearate, added to increase oiliness and load-carrying capacity. Continental Oil Co. has been marketing this oil commercially for about a year. Oil 1 is identical with Oil 2 with the exception that a different sulfur-type antioxidant and corrosion inhibitor was used. Said the report: "The other three oils selected from the results of the preliminary chemical and mechanical laboratory investigations represent the top quality lubricating oil of three of the leading manufacturers. Test conditions were designed to represent the most severe conditions likely to be encountered in service and were sufficiently severe to reveal differences in superior grades of oils."

The percentage of change in each oil on each test was calculated, calling Oil 1 the reference oil and rating its changes as 100%. In all comparisons, a higher percentage represents a larger amount of change in the oil or engine condition and a lower percentage a lesser amount. Table 2 gives a summary of changes in neutralization number, formation of sludge, increase in viscosity, and formation of resin, for the 5 oils for all tests, as related to changes in reference Oil 1.

The paper on this subject presented at the Tulsa meeting was entitled, "Changes Occurring in Oils and Engines from Use," and was prepared by Frank A. Suess, W. A. Jones, H. C. Baldwin, and Bert H. Lincoln, all of Continental Oil Co.

System Described for Rating "Dirtiness" of an Engine

A numerical rating system, for visually determining the "dirtiness" of an engine, was described, at the SAE Fuels and Lubricants Meetings in Tulsa, by H. L. Hemmingway, of Kendall Refining Co., Bradford, Pa. The system has been found helpful in interpreting and correlating test data and in the evaluation of motor oils run on oil stability engine tests.

"Oil stability engine testing is the most expensive laboratory means of oil evaluation, but the only one for which there is no standard method of expressing test results," said the speaker. "In view of the vast amount of work being done in this field, and a growing amount of inter-laboratory co-operation, it would seem advisable and possible to develop a standard, universal method of rating engine dirtiness."

The system selected in the Kendall laboratories was adapted from one in use by the U. S. Naval Experiment Station and other commercial laboratories. It consists in rating each part of an engine, assigning it a demerit of zero if it is in "like new" condition and a rating of 10 if it is as bad as it possibly can be from the standpoint of deposits, or if it has actually caused engine failure. Included in the parts rated are valves, combustion chamber, oil ring slots, under pistons, piston skirts, piston lands, ring grooves, ring and groove sides.

Generally, the first 3 or 4 demerits are assigned on the basis of deposit type (carbon, sludge, gum, etc.) and the remaining demerits are estimated from the amount of the deposit. The average rating for each group of parts is calculated and the total demerit rating for the engine is the sum of the average ratings for the individual parts.

The maximum possible rating for this particular method is 120, and the speaker said that the range of engine conditions encountered so far is from the relatively clean condition represented by a rating of only 13.5 demerits to the very dirty condition of an engine which was "frozen" by varnish deposits, 59.6 demerits.

This paper, entitled, "The Value of Engine Rating Systems in the Correlation of Oil Stability Engine Tests," described the use of the rating system in a program of study by the Kendall Refining Co. of oil stability improvement possibilities in various oil grades. Engine dirtiness was rated after engine tests on an SAE 10 conventionally refined distillate oil, an SAE 10 solvent refined distillate, solvent refined distillate with inhibitors, and a blend of heavy oil with the solvent refined distillate.

The investigation of the improved stability of the blend was suggested, it was stated, by the oxygen absorption work carried on at Pennsylvania State College, in which it was determined that certain highly refined heavy fractions of Pennsylvania crude oil had a definite dispersing effect on insolubles, and varying degrees of ability to reduce oxygen absorption. It was stated that, above a critical percentage of a typical highly refined heavy oil fraction of this type in the light oil, the blends appear to assume the clean oxidation characteristics of the heavy oil, as judged by the reduction in naphtha insolubles on the 10-hour Underwood Oxidation runs.

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